Environment Canada Environnement Canada

Canadian Environmental Protection Act

Report for the Period April 1993 to March 1994

At the end of each fiscal year, Environment Canada publishes an annual report for Parliament on the *Canadian Environmental Protection Act* (CEPA) . This report covers the period from April 1, 1993 to March 31, 1994.

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Minister's Message

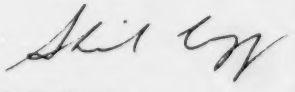
I am pleased to present this fifth annual report on the *Canadian Environmental Protection Act* (CEPA) to Parliament. The past year has been a particularly busy one in environmental protection. Under CEPA in 1993-94, Environment Canada:

- completed assessments of all 44 substances on the first Priority Substances List and made great headway in developing the second;
- brought one new regulation into force, made major revisions to one regulation and continued work on several other regulatory initiatives;
- reviewed all 25 CEPA regulations, taking action to eliminate any duplication;
- began negotiations on amendments to the London Convention on ocean dumping aimed at strengthening safeguards of the marine environment;
- contributed to major international research on controlling and cleaning up marine oil spills; and
- maintained an active inspection program for compliance with CEPA regulations throughout Canada.

CEPA was passed six years ago to respond to a number of concerns: the need to control toxic substances, the need to prevent harm to the environment, the lack of coherence among federal laws, and the inadequacy of enforcement. Since then, much has changed. Our understanding of the importance of sustainable development and biodiversity has increased dramatically. A strong commitment to link environmental health with human health has emerged. Many new international agreements must be considered to advance global action.

Perhaps most importantly, we see a growing desire throughout Canada and the world to move from simply controlling or cleaning up pollution to preventing it in the first place. CEPA recognizes the need for preventive measures and, clearly, the objective of working with key stakeholders for pollution prevention as a national goal goes beyond existing laws and regulations. But we can do more. We know now that we must consider the entire ecosystem when we address issues of air, land, water and living organisms.

This report is the last before the CEPA Parliamentary Review, during which the Standing Committee on the Environment and Sustainable Development will encourage Canadians to reflect on CEPA's accomplishments and to look ahead to CEPA's greater potential. Canadians are demanding more say on environmental protection. The Minister of Health and I, who share responsibility for CEPA, believe that the review process will give Canadians an opportunity to voice their opinions on current environmental protection issues. We are confident that the fruit of this process will be a better Act and a healthier environment.



Sheila Copps
Deputy Prime Minister and
Minister of the Environment

Canadian Environmental Protection Act

The *Canadian Environmental Protection Act* (CEPA) is "an Act respecting the protection of the environment and human life and health." When CEPA was created in 1988, the government brought together, in a comprehensive piece of legislation, environmental provisions of several other statutes administered by Environment Canada. Those provisions include those dealing with toxic substances, nutrients, ocean dumping, environmental research, guidelines and codes of practice as well as agreements with provinces and territories. Other Acts which, with CEPA, protect the Canadian environment include those preserving our heritage, parks, wildlife, aquatic life, natural resources and threatened regions.

CEPA's comprehensive mandate covers toxic substances throughout the ecosystem and may control any stage of a product's life cycle, from development and manufacture to transportation and disposal. Its primary focus is prevention—averting environmental problems before they occur. Preventive measures include strong regulations and enforcement mechanisms; non-regulatory approaches, such as environmental guidelines, codes of practice and incentives with industry; as well as the development and transfer of pollution measurement and control technologies.

Through CEPA, the federal government recognizes and encourages the shared stewardship of the environment with businesses, consumers and other levels of government, both nationally and internationally. Environment Canada and Health Canada develop CEPA regulations and guidelines, and Environment Canada administers the Act on behalf of the federal government.

Reviewing CEPA

Section 139 of CEPA calls for a Parliamentary Review of the Act within five years of the enactment of the legislation. In June 1993, a motion to refer CEPA to committee for review was brought before the House of Commons. In light of the upcoming general election, however, the Standing Committee on Environment deferred the Review. After the election, another motion will be brought before the House during 1994.

In anticipation of the Review, Environment Canada identified some of the issues that may face the Committee. The scope and significance of the issues demanded that a dedicated team be formed, and the CEPA Office was formed in January 1994. The first task was to develop a paper titled "An Overview of the Issues," which will be tabled in the House. Separate papers, to be published during the summer of 1994, will elaborate on the issues contained in this document.

CEPA Evaluation

In 1993-94, the fifth year after the legislation was promulgated, the Evaluation Branch of Environment Canada commissioned an independent consultant, Resource Futures International, to review the Act. The resulting report, *Evaluation of the* Canadian Environmental Protection Act *(CEPA): Final Report*, on CEPA's effectiveness, impacts and alternatives will form an integral part of the Department's presentation at the Parliamentary Review.

In general, the report concluded that CEPA helps the federal government assert national leadership in environmental protection, particularly in the responsible management of toxic substances.

The report also showed, however, that CEPA's implementation has been hampered by the patchwork of regulations and enforcement schemes that cover toxics issues under federal jurisdiction, and that the Act has failed to separate effectively risk assessment from risk management. In addition, the report commented on the limitations of a narrowly interpreted substance-by-substance approach to environmental protection, the overly strict criteria for equivalency agreements, the absence of an administrative penalty scheme, and the inadequate use of the Act's power to regulate federal activities.

Sharing our Responsibility for the Environment

Environment Canada strongly supports the principle of all Canadians sharing responsibility for the environment. By involving the public in the design of its policies, development of its programs and delivery of its services, Environment Canada has reaffirmed the importance of public consultation and partnership, enabling Canadians to make more informed environmental decisions.

CEPA is just one of many tools available to Environment Canada to help protect the environment. While this report deals solely with programs directly related to CEPA, there are many programs that help CEPA prevent pollution or protect the environment, often in cooperation with the Canadian Council of Ministers of the Environment (CCME). These include the National Contaminated Sites Remediation Program, the NOx/VOC Management Plan and Environmental Citizenship, as well as programs that deal with CFC education, pollution prevention and many voluntary actions taken by industry.

CEPA's Channels for Cooperative Action

Included in CEPA's structure are opportunities for governments and experts in relevant disciplines to consult and to coordinate their efforts. Mechanisms for this consultation and coordination include advisory panels, the Federal-Provincial Advisory Committee and its working groups, and agreements with the provinces and territories.

Advisory Panels

The Ministers of the Environment and Health appoint experts from interest groups, industry and the academic community to advisory panels. One of these, the Priority Substances Advisory Panel, advised the Ministers on CEPA's first Priority Substances List (PSL1) in 1988-89. The list identified 44 potentially toxic substances that most urgently require assessment.

The Government will appoint an Advisory Panel in late 1994 to recommend inclusions in a revised Priority Substances List (PSL2). This list will then be published and revised on a continuing basis every three years.

Federal-Provincial Advisory Committee

To work toward nationally consistent environmental standards, representatives from Environment Canada, Health Canada, and each of the provinces and territories comprise the Federal-Provincial Advisory Committee (FPAC). This group ensures that the federal and provincial governments consult with each other in taking action to protect the environment from the effects of toxic substances.

At its April 1993 meeting, FPAC identified the following as priority areas for this fiscal year:

- the CEPA Parliamentary Review;
- a national approach to regulating wastewater effluents;
- aboriginal lands; and
- the first and second Priority Substances Lists (PSL1 and PSL2).

The Committee dealt with these priorities actively during the year. As the findings for PSL1 assessments became available, they were regularly discussed by the Committee prior to the approval and release of the assessments. The Committee was consulted on the process for selecting substances to be included on PSL2 and on the means to ensure provincial participation on the Ministers' Expert Advisory Committee.

On an ongoing basis, FPAC was also consulted on a variety of regulatory initiatives.

The Federal-Provincial Working Group on Controls Harmonization (Ozone-Depleting Substances)

The Federal-Provincial Working Group on Controls Harmonization, an organization created by FPAC, is working toward a coordinated national strategy to eliminate ozone-depleting substances in Canada. It now reports directly to the National Air Issues Coordinating Committee as a formal task group, rather than to FPAC. It encourages regulatory consistency and information exchange among all levels of government.

The National Action Plan for the Recovery, Recycling and Reclamation of CFCs, which was prepared by the working group, will minimize emissions from existing equipment, reduce the demand for new CFCs by managing the existing supply, and maintain an adequate amount of CFCs for essential uses after CFCs are phased out. Canada's Environment Ministers consider CFC recovery and recycling a high priority.

The working group is also addressing the management of halons and other ozone-depleting substances. It aims to achieve a consistent regulatory approach across Canada. The group is also considering the need for eventual destruction of surplus ozone-depleting substances and the use of economic instruments in ozone layer protection programs.

The Federal-Provincial Working Group on Air Quality Guidelines and Objectives

Over the past year, the Federal-Provincial Working Group on Air Quality Guidelines and Objectives continued to develop several air quality objectives. This working group is co-chaired by Environment Canada and Health Canada. The objectives under review for "maximum desirable, acceptable and tolerable concentrations" include nitrogen dioxide, hydrogen fluoride, carbon monoxide and total reduced sulphur. The group agreed to place a higher priority on developing an air quality objective for fine particulate matter.

In association with the NOx/VOC Management Plan Science Program, the group is also developing recommendations for revising ground-level ozone objectives for the protection of health and vegetation.

Agreements with the Provinces and Territories

Under Section 34(6) and Section 98, the federal government has the option to enter into equivalency and administrative agreements with the provinces and territories as part of CEPA's legislative framework. Once implemented, these agreements will be invaluable tools for federal and provincial governments to work toward achieving common goals on mutually acceptable terms. They will also reduce overlapping federal and provincial initiatives and provide a single government window to industry. At the same time, they will ensure that environmental standards remain consistent.

During the 1993-94 fiscal year, the federal and provincial governments made significant progress in negotiating a number of agreements. While none had been signed by March 31, 1994, the commitment to reaching agreements, demonstrated by both levels of government, will lead to a number of agreements being signed in 1994-95.

Administrative Agreements

Administrative agreements are "work-sharing" partnerships that allow federal and provincial governments to share the work of administering regulations. They can cover such activities as inspection, enforcement, monitoring and reporting, but do not release or limit any of the parties from their respective responsibilities. Under an administrative agreement, the federal government remains accountable to the Canadian people and must report annually to Parliament on the agreement.

Over the past year, the federal government has worked closely with most provinces to develop draft administrative agreements. These range from general administrative agreements to agreements that concentrate on specific industrial sectors, such as the pulp-and-paper industry. Negotiations for several of these agreements are near successful completion. The first scheduled for signature is a pulp and paper agreement with Quebec in May 1994.

Equivalency Agreements

Equivalency agreements are partnerships that suspend the application of a federal CEPA regulation in a province or territory by recognizing an equivalent provincial or territorial regulation. The provincial or territorial regulations need not have the same wording as the federal regulations to be considered equivalent, but they must have the same effect. Under an equivalency agreement, the federal government still applies its federal regulations to federal lands, works and undertakings, reporting annually to Parliament on the administration of equivalency agreements.

Negotiations continue with some provinces on draft equivalency agreements for several CEPA regulations. Alberta is expected to sign the first equivalency agreement in June 1994.

CEPA Part I: Environmental Quality

Research and Monitoring

To establish fair restrictions and foster the development of new technologies to meet them, the federal government supports research and monitoring activities. It uses scientific information from these activities to verify the progress of regulations, agreements and other non-regulatory instruments. To ensure that the public has access to accurate environmental information, the Government also publishes results of these activities. All publications related to CEPA may be found in Appendix A.

CEPA Part I authorizes Environment Canada, a major science department, to undertake research on a variety of fronts. Five Environment Canada research institutes make direct contributions to CEPA. Research not related to CEPA is not reported here.

Health Canada also conducts toxicology research to identify hazardous substances and their adverse effects on health.

Environmental Technology Centre

The Environmental Technology Centre, near Ottawa, coordinates the federal-provincial National Air Pollution Surveillance (NAPS) Network. This system, which measures ambient air quality, comprises 130 monitoring stations using more than 400 instruments in 52 urban centres across Canada.

In 1993-94, the Centre provided air monitors, technical assistance, calibration materials, analytical laboratory support, data storage and dissemination, and program direction to cooperating agencies. Working with Health Canada and the Atmospheric Environment Service, the Centre monitored eight sites for acid aerosols, which are known to cause health problems.

The Centre also operates a vehicle emissions testing laboratory. During the past year, the laboratory completed a variety of projects, including

- a joint program with Transport Canada to determine the contributions of service vehicles, auxiliary power units, taxis, aircraft engines and other sources of air pollution at airports;
- a joint program with Stock Transport, Engine Control Systems and Natural Resources Canada to study the emissions-reduction performance of "flow-through" catalysts and diesel particulate traps on school buses; and
- a joint program with Gaseous Fuels Injection Ltd. (GFI) to develop a natural gas fuel-injection system for new vehicles and after-market conversions.

In support of CEPA and related guidelines, the Centre also helped to develop regulatory reference methods and associated quality assurance programs to measure toxic substances. For example, the Centre

- issued the fourth in a series of certification samples for anions and metals on air filters and polychlorinated biphenyls (PCBs) in oil, under a joint agreement with the Canadian Association of Environmental Analytical Laboratories;
- helped develop, through the Canadian General Standards Board, revised methods to analyze sulphur in diesel fuel to support industry-government guidelines;
- updated the CEPA reference method for vinyl chloride;
- finished developing a quick-screening method for inspectors to test compliance with federal asbestos emissions regulations;
- published a performance-based protocol for the real-time measurement of gaseous emissions from thermal power generating plants for CCME guidelines;

- published amended CEPA reference methods for lead and total particulates under the secondary lead smelter regulations; and
- completed development of a draft CEPA reference method for PCBs in a variety of environmental matrices like waste oils, soils and air.

In addition, the Centre worked on measurement programs for volatile organic compounds (VOC) and ambient air toxics. It operated the toxics air monitoring network of 30 sites and increased the sampling frequency to eight hours every two days at six sites during the summer months. The Centre provided data related to VOC implicated in ground-level ozone formation to the NOx/VOC Control Program, and successfully introduced a new method for measuring polar and biogenic VOC.

Under Section 7 of CEPA, the Centre is authorized to conduct pollution research and develop methods to control pollution. As part of this mandate, the Centre worked with private and public agencies inside and outside Canada to investigate the properties, behaviour, fate and effects of marine and non-marine oil and chemical spills.

It also undertook technology development and demonstration work on oil-spill containment booms, oil skimmers, spill-treating agents, spill modelling and remote sensing. During the year, for example, the Centre and its domestic and international partners

- developed and tested a prototype airborne laser-based sensor to detect oil slicks;
- developed standard protocols for testing spill-treating agents and sorbents;
- constructed a unique testing laboratory for spill-response equipment;
- developed technology for treating contaminated water and submitted a patent application for it;
- licensed the analytical applications of a DOE-patented technology, the Microwave-Assisted Process (MAP™), to the Hewlett-Packard Company for the largest licence signing fee ever obtained by the federal government; and
- successfully completed the Newfoundland Offshore Burn Experiment (NOBE), a major international $7-million project to study the feasibility of burning oil slicks contained by fire-resistant booms.

Wastewater Technology Centre

Established in 1971, the Wastewater Technology Centre in Burlington, Ontario, has become the foremost Canadian facility for treatment and disposal technologies for municipal and industrial wastewater and residues.

Recently, the Centre completed a 33-month trial as the first government-owned, contractor-operated (GOCO) research and technology development facility designed to accelerate the commercialization of new technologies. Environment Canada hired an independent consultant, APOGEE Research Inc., to assess the trial results. The consultant determined that GOCO was a success and should be continued.

In 1993-94, the Centre was involved in ongoing and new projects. Researchers began work on innovative and cost-effective ways to reduce phosphorous and ammonia to very low levels in municipal sewage treatment plants, as well as to control and manage combined sewer overflows and storm water discharges. Work continued on optimizing the operation of municipal and industrial wastewater facilities, and the pilot evaluation of an innovative technique to treat pulp-and-paper wastewater was completed. New, safe methods of disposal for organic and inorganic residues were examined, as were protocols for evaluating and regulating the disposal of solidified wastes.

In addition, researchers focused on developing and evaluating new technologies to remediate contaminated sites, including destroying or removing contaminants from ground water, soils and sediments. In line with the national direction, the Centre shifted its industrial research emphasis to pollution prevention from "end-of-the-pipe" treatment technologies.

The Centre made substantial progress in several industry sectors on quantifying the use of toxics, identifying options for source reduction, in-stream recovery or recycling, and assessing the efficiency of innovative technologies. The primary focus was on the metal finishing, automotive-parts manufacturing, printing and graphic arts, textile and chemical pulp industries, and aircraft maintenance and painting facilities.

Additional emphasis was given to helping Canadian industry showcase its technology, and to facilitating technology transfers nationally and internationally, particularly with Mexico and China.

National Water Research Institute

The National Water Research Institute (NWRI), located in Burlington, Ontario, is Canada's largest freshwater research establishment. In partnership with Canadian and international freshwater scientists, NWRI conducts a national program of research and development in the aquatic sciences to examine current and emerging water-quality problems in Canada.

In 1993-94, NWRI completed assessments for substances on the first Priority Substances List (PSL1), including nickel and chromium, and continued planning for PSL2 . NWRI also addressed research priorities identified in CEPA's Priority Substances Assessment Program; continued quality assurance and control (QA/QC) and method development; and examined the effects of pulp-and-paper and mining effluents on aquatic ecosystems.

To focus the attention of the scientific community on CEPA's current science needs, NWRI developed a compendium of research needs, as outlined in the Priority Substances List (PSL) reports. To close data gaps identified in the reports, staff began studies on environmental occurrences of chlorinated paraffins, fluoride, non-pesticidal organotin compounds and aniline.

In the area of analytical QA/QC, NWRI continued to generate reference material for dioxins and furans in sediment. NWRI also conducted inter-laboratory comparison studies on PCBs and polycyclic aromatic hydrocarbons (PAHs) in sediments, and optimized sample preparation procedures for PCBs and chlorobenzene in sediments. In collaboration with the Department of Fisheries and Oceans (DFO), NWRI developed a method for the rapid extraction of PCBs from fish tissues.

In cooperation with DFO, Industry Canada, the Pulp and Paper Research Institute of Canada (PAPRICAN), several pulp mills and three Canadian universities, NWRI continued its research to close information gaps identified in the CEPA Assessment of Effluents from Pulp Mills Using Bleaching. This program has already resulted in new methods to test effluents for their capacity to cause sub-lethal effects in fish.

In cooperation with MEND (Mine Environment Neutral Drainage), several mining companies and Canadian universities, NWRI is expanding its research on the fate of metals in aquatic ecosystems by examining several mining sites in Canada.

Canadian Wildlife Service

The Canadian Wildlife Service (CWS) conducts CEPA research and monitoring at its National Wildlife Research Centre and regional offices. By detecting and measuring the effects of toxic substances on wildlife, CWS researchers can assess the overall health of species, predict the impact of pollutants, and provide an early warning system for potential environmental and human health problems.

During 1993-94, CWS was involved in several major research, monitoring and assessment projects aimed at assessing effects of contaminants on wildlife and their ecosystems throughout Canada. A new bioassay technique, developed at the National Wildlife Research Centre, should be useful in determining the sensitivity of rare and endangered species to the toxic and biochemical effects of dioxins, furans, PCBs and related environmental contaminants.

In the Atlantic Region, CWS organized volunteer networks at five Atlantic Coastal Action Program (ACAP) sites to conduct monthly wildlife surveys. The survey results will be used to determine which species would best indicate contaminant exposure and demonstrate the effectiveness of remedial action. Also through the sites, CWS is studying the feasibility of using tree swallows as indicators and a volunteer network is being used to monitor the reproductive success of this species at the contaminated sites.

In the Quebec Region, CWS researchers found that adult and young ospreys living around hydroelectric reservoirs were contaminated with mercury. No effect on reproduction was observed, although a problem may arise in young birds depending on the length of time that they spend around the reservoirs.

Also in Quebec, a project was initiated to study cadmium and mercury levels in birds and mammals. Preliminary results indicate there are lower levels of mercury in the golden eagle than the bald eagle. A study on the exposure of wildlife to pulp and paper mill effluent on the Saint-Maurice River in Quebec indicated that herring gulls, mergansers and mink contain low levels of dioxins and furans. No effect on their health was observed. The analysis of frogs and shrews collected near the site of the 1990 Saint-Amable tire fire determined that these animals contained very low levels of toxic substances liberated by the fire.

In the Ontario Region, tree swallows are being used as biomonitors of contamination in wetlands associated with two areas of concern on the Great Lakes. Data collected will be compared with that collected after remediation of the contaminant problems at these sites. Studies continued on the dynamics of chlorinated hydrocarbons in the common snapping turtle, another indicator of the health of wetland habitats.

As part of a collaborative project with McMaster University, CWS studied the relationships between the mutation rate of DNA in herring gulls and the exposure to PAHs. Preliminary results suggest that fewer mutations occur on less contaminated sites when compared with more contaminated sites, such as Hamilton Harbour. CWS also collaborated with researchers from the University of Windsor and McGill University to examine the effects of zebra mussels on levels of contaminants in fish-eating birds in Lake Erie.

CWS's continuing research on the reproductive failure of herring gulls in Lake Superior points to poor diet quality and quantity as potential causes. Contaminant analyses of both adults and eggs collected at several sites revealed that halogenated aromatic compounds were not related to the failure.

Using data collected on the contamination of herring gull eggs since the early 1970s, CWS researchers used computer modelling to predict contaminant levels in forage fish and Lake Ontario water. Analyzing the herring gull egg monitoring data for dioxins and furans showed a pattern consistent with a combustion source. The exception occurs in Lake Ontario and Saginaw Bay, Lake Huron, where specific sources of dioxins were indicated. Organochlorine levels and the breeding biology of Great Lakes Caspian terns were also studied.

Also in Ontario, CWS continued to study the effects of mercury exposure on common loons. To date, the study has indicated that a significant proportion of lakes in central and northern Ontario have small fish with mercury concentrations high enough to affect loon reproduction.

A contrasting study of the potential effects of mercury in fish-eating birds in Manitoba and Saskatchewan concluded that the risk of adverse effects is low. Certain lakes in the Churchill-Nelson River system, as well as a small number of other lakes in the two provinces, are possible exceptions to this. Data, however, were lacking for several of the prairie lakes.

An ongoing study on the Wapiti River near Grande Prairie, Alberta, is now examining whether the tree swallow is the best example of riparian wildlife that preys on aquatic biota and is exposed to pulp and paper mill effluents. The study will assess whether existing Environmental Effects Monitoring guidelines for aquatic biota adequately interpret the effects of pulp and paper mill effluents on wildlife.

A study on lead exposure in bald eagles and golden eagles in the Prairie Provinces continues. A small percentage (less than 10 percent) of eagles found dead were diagnosed as lead poisoned. This number is much lower than that estimated for southern British Columbia, where a ban on the use of lead shot was implemented in 1990.

In British Columbia, monitoring of dioxin and furan levels in herons and cormorants from the Strait of Georgia revealed that after an initial decline following enhanced pollution control at pulp and paper plants, concentrations have stabilized. The environmental threat, however, is not over as dioxins and furans are very persistent in marine sediments. Concentrations, therefore, will continue to be monitored. Dioxins, furans and other organochlorines were also monitored in birds of prey in the Strait of Georgia and in the Fraser and Columbia River basins. The elevated levels of bald eagles indicate that they are the most contaminated of the fish-eating species breeding in the Strait of Georgia area. Research to determine the effects of this exposure on reproduction is continuing.

In the Northwest Territories, researchers continued to monitor contaminant levels in seabird eggs from the Canadian Arctic. The data collected is being added to a database, established in the mid-1970s, that helps to determine temporal trends of metals and organochlorines in these birds. CWS, in conjunction with provincial and territorial wildlife agencies and local hunting and trapping associations, collected waterfowl and other game birds from 12 communities in the Northwest Territories and from 23 sites in the Prairie Provinces. Risks to human health from eating these birds can be assessed by determining contaminant levels. Earlier data on wild foods collected from Ontario, Quebec and Atlantic regions were evaluated by Health Canada, and concern is generally low.

As part of a Carleton University Ph.D. project being carried out at CWS, a method was verified for determining methylsulfone-PCBs in biological samples. Twenty-two persistent methylsulfone metabolites were identified in polar bear tissues. In addition, researchers determined how these potentially toxic compounds are distributed in the western hemisphere. As part of another collaborative project, CWS and graduate researchers at the University of Saskatchewan examined the seasonal kinetics of chlorinated contaminants in the fat and milk of female polar bears and their cubs. With the Department of Fisheries and Oceans and the Quebec Department of Public Health, CWS also completed a comparison of PCB levels in Arctic marine mammals, polar bears and humans in northern Quebec.

National Hydrology Research Institute

Environment Canada's National Hydrology Research Institute (NHRI), located in Saskatoon, Saskatchewan, researches the environmental issues surrounding Canada's aquatic ecosystems. In collaboration with many national and international partners in universities, government agencies, other research facilities, and the private sector, NHRI participates in interdisciplinary research programs that address regional, national and international environmental problems.

In 1993-94, NHRI continued to investigate the effects of contaminants on large river systems, a major federal-provincial research program. Under the Fraser River Action Plan and the Northern River Basins Study, NHRI scientists are assessing the effects of pulp mill effluents on aquatic ecosystems. In another major research program, scientists in Saskatchewan are examining the impact of agrochemicals on prairie wetland ecosystems.

Research on ground water contamination during 1993-94 includes a major new program in the Fraser Lowlands of British Columbia that uses stable isotope techniques to investigate sources, possibly agricultural, of nitrate contamination of transboundary ground water. In partnership with industry, ground water specialists are continuing to research the development of biotechnological techniques, such as biobarriers, and bioremediation technologies for *in situ* treatment of contaminated sites.

In the North, NHRI is studying the role of snowcovers in controlling the release of inorganic contaminants accumulated in the snowpack, and on the impact of the snowcovers on northern ecosystems.

State of the Environment

Canadians need credible, timely and comprehensive information on environmental trends and conditions if they are to make informed choices leading toward sustainable development. For that reason, the federal government reports periodically to Canadians on the state of the environment, as required by CEPA. In its reports, the Government tries to relate environmental information to social and economic considerations.

Environment Canada's State of the Environment (SOE) organization, in accordance with CEPA's legislative mandate, is now working to

- publish a national report on the state of Canada's environment at regular intervals; and
- develop and release a comprehensive set of national environmental indicators on a regular basis.

Reporting

The State of Canada's Environment, Canada's second national SOE report, was released in April 1992. Prepared over a four-year period with substantial contributions from a broad range of stakeholders, the report has become a Canadian bestseller. To date, over 15,000 copies have been sold. An extensive evaluation of the report revealed a 97 percent satisfaction rate among users. Drawing on the results of this evaluation, the SOE organization developed a strategic plan for development of the next national SOE report, to be released in 1996. It also put SOE networks in place and established coordinating committees. Work on chapter manuscripts began in 1993-94.

Ecological Monitoring

In 1993-94, the common national ecological framework underwent minor fine tuning. Acceptance of this framework continued to grow as the number of partnerships increased. Most notably, this framework was used in trilateral environmental workshops between Canada, the United States and Mexico.

The work on ecological science centres progressed from the conceptual stage to the development of business plans for six pilot centres. To facilitate this initiative, information about federal and provincial monitoring networks was incorporated into a geographic information system. Staff conducting departmental regional monitoring evaluations and assessments found this system particularly useful.

Environmental Indicators

Environment Canada uses bulletins to report regularly on a set of national environmental indicators. Four indicator bulletins were published in 1993-94: *Toxic Contaminants in the Environment: Persistent Organochlorines; Stratospheric Ozone Depletion: November 1993 Update; Urban Water: Municipal Water Use and Wastewater Treatment*; and *Urban Air Quality*.

The Department began indicator research and development in the following areas: acid rain, urban green spaces and land-use change, marine fish resources and marine ecosystem health, forest resources, fresh water quality, biodiversity and state of wildlife, metal contaminants in the ecosystem, and waste management.

Environment Canada is seeking the best ways to present indicators and to ensure that decision makers can use them as a way to take environmental considerations into account. To this end, it has developed scenarios for the users of several indicators and prepared a report on ways that data gathered through state of the environment reporting can assist planning by the financial services industry.

Consultations and partnerships with stakeholders remain an integral part of the indicators program. Stakeholders are being invited to review and comment on proposed indicators during the development process. Extensive stakeholder involvement is critical if the indicators are to be accepted and used as "common currency." Work with the provinces and territories through the CCME resulted in the production of a working menu of environmental indicators for CCME purposes.

During 1993-94, SOE played a particularly active role in the development of indicators for Organization for Economic Co-operation and Development's (OECD) country environmental performance reviews. The results of this effort were published in an OECD Environment Monograph.

Environmental Information Network

After reaching agreement on the basic assumptions upon which to develop an Environmental Information Network, Environment Canada established the systems specifications for such a network. They outlined the specifications in a request for proposal for private industry to bid on a contract for future development. More than 75 companies reviewed the proposal.

Non-regulatory Instruments

CEPA Part I, particularly Section 8, gives the federal government responsibility for a wide range of non-regulatory actions.

Researchers are devoting considerable effort to developing guidelines and codes of practice to give industries and regulators clear directions on how to reduce emissions, effluents and wastes.

Recently developed non-regulatory instruments include

- Code of Good Practice for the Management of Pesticides at Federal Facilities; and
- Thermal Power Generation Emissions: National Guidelines for New Stationary Sources (revised).

Environmental Quality Guidelines

The Minister of the Environment has the authority to formulate environmental quality guidelines and objectives under Section 8 of CEPA. Federal, provincial and territorial agencies use these non-regulatory devices when assessing and managing environmental quality issues.

In 1993-94, Environment Canada, in conjunction with the CCME, published water quality guidelines for the following chemicals on the Priority Substances List (PSL): tetrachloroethylene, aniline, 3,5-dimethylaniline, bis(2-ethylhexyl) phthalate, di-n-octyl phthalate, and dibutyl phthalate.

In addition, water quality guidelines were published for ethylene glycol, propylene glycol and diethylene glycol. Work continued on water quality guidelines for dioxins, furans, PAHs, cadmium, styrene and methyl tertiary-butyl ether. Plans were made to develop guidelines for the following PSL substances: benzidine, monochlorobenzene, 1,2-dichlorobenzene, 1,4-dichlorobenzene, trichlorobenzene, tetrachlorobenzene, pentachlorobenzene, hexachlorobenzene, arsenic, toluene, benzene, ethylbenzene and components of chlorinated wastewater effluents (nitrate, phosphate, ammonia, chloramines, biological oxygen demand (BOD), dissolved oxygen (DO), suspended solids, free residual chlorine and nutrients) for receiving waters.

As well, Environment Canada, in conjunction with the CCME, finalized the *Protocol on the Derivation and Use of Canadian Tissue Residue Guidelines for the Protection of Wildlife in Aquatic Ecosystems*. Work continued on tissue residue guidelines for dioxins, furans and cadmium. Plans were made to develop tissue residue guidelines for arsenic and hexachlorobenzene.

The *Protocol for the Derivation of Canadian Sediment Quality Guidelines for the Protection of Aquatic Life* was finalized through the CCME and prepared for publication. Preliminary draft documents on sediment quality guidelines for cadmium, mercury, PAHs, dioxins and furans were completed for in-house review. Work began on the development of marine sediment quality guidelines for PCBs, as well as on guidelines for background concentrations of naturally occurring substances in sediments. Development of sediment quality guidelines for arsenic, copper, lead and zinc should begin in 1994-95.

In addition, Environment Canada and the CCME are preparing a national protocol for development of soil quality criteria. In 1993-94, the development of soil quality criteria for copper, chromium, lead, benzo(a)pyrene and cyanide began, and criteria for arsenic, cadmium, mercury, pentachlorophenol, trichloroethylene, tetrachloroethylene, benzene, toluene, xylene, and ethylbenzene were prepared and will be approved by the CCME in 1994-95. Plans were also made to develop criteria for phenol, ethylene glycol, naphthalene, vanadium and zinc in 1994-95.

Related guidance documents were published for these guidelines, namely *A Framework for Ecological Risk Assessment at Contaminated Sites in Canada: Review and Recommendations* and *A Review of Whole Organism Bioassays for Assessing the Quality of Soil, Freshwater Sediment and Freshwater in Canada*. Other documents supporting the guidelines are in preparation, including "Guidance Manual for Developing Site-Specific Soil Quality Remediation Objectives for Contaminated Sites," "Guidance Manual for Ecological Risk Assessment at Contaminated Sites in Canada," "Guidance on the Application of Whole Organism Bioassays to Contaminated Site Assessment and Remediation," "Evaluation and Distribution of Master Variables Affecting Solubility of Contaminants in Canadian Soils," and "Estimates of Soil Ingestion by Wild and Domestic Animals."

The Environmental Choice Program

The Environmental Choice Program[M] (ECP), Environment Canada's voluntary eco-labelling program, helps consumers identify products and services that reduce the burden on the environment. The EcoLogo™, three doves intertwined to form a maple leaf symbolizing Canadian government, business and consumers working together for the environment, identifies products and services that meet the ECP's stringent environmental criteria.

The ECP is cooperating internationally with several other countries that are establishing labelling programs. In Canada, the EcoLogo is being well received in the marketplace and generating increasing interest from both consumers and industry.

Protected under the *Trade Marks Act*, Environmental Choice, EcoLogo, and the EcoLogo symbol are official marks of Environment Canada. They may be used only under licence or through authorization from the Program.

In April 1994, the ECP will launch an authorized printing of the EcoLogo program to encourage and facilitate the printing of the EcoLogo on ECP-certified paper stocks by interested, non-licensed parties. This initiative is expected to increase exposure of the EcoLogo and boost demand for ECP-certified paper products, making it a beneficial venture for both the Program and its licensees.

At the end of March 1994, the Environmental Choice Program had finalized 29 guidelines for the following products:

- re-refined motor oil;
- products made from recycled plastic;
- batteries;
- water-based paint;

- fine paper from recycled paper;
- miscellaneous products from recycled paper;
- newsprint from recycled paper;
- solvent-based paint;
- heat-recovery ventilators;
- diapers;
- diaper services;
- composting systems for residential waste;
- automotive fuels;
- reusable utility bags;
- major household appliances;
- energy-efficient lamps;
- water-conserving products;
- compost;
- laundry detergents;
- automatic dishwashing detergents;
- non-rechargeable batteries;
- domestic water heaters;
- building materials—acoustical products;
- building materials—thermal insulation;
- dry cleaning services;
- toner cartridges;
- engine coolant concentrate;
- adhesives; and
- sealants and caulking compounds.

More than 1,500 products and services have been certified and are now displaying the EcoLogo. Guidelines for many other products are now under development.

CEPA Part II: Toxic Substances

Part II of CEPA focuses on reducing the risks posed by new and existing substances. In order to distinguish new substances from existing ones and to prescribe reporting requirements for new substances, Environment Canada has developed two major inventories

- the **Domestic Substances List,** an inventory of all chemicals known to be in use in Canada during 1984-86; and
- the **Non-domestic Substances List,** an inventory of substances not in use in Canada from 1984-86 but used elsewhere.

Part II of CEPA also requires the establishment of the Priority Substances List (PSL), a list of substances considered most important for assessment.

The Priority Substances List

The first Priority Substances List (PSL), published in February 1989 by the Ministers of the Environment and of Health, comprised 44 substances. About one third of the substances on the list were families of chemicals or effluents, some of which may comprise up to several hundred individual substances. Assessment of these substances, to determine whether they were toxic or capable of becoming toxic, as defined under Section 11 of CEPA, was thus given high priority.

According to CEPA, a substance is toxic if it is entering or may enter the environment in a quantity, or concentration, or under conditions

- having, or that may have, an immediate or long-term harmful effect on the environment;
- constituting, or that may constitute, a danger to the environment on which human life depends; or
- constituting, or that may constitute, a danger in Canada to human life or health.

The Government completed assessments of all 44 substances on the PSL within the five-year time frame referenced in Section 14 of CEPA. Of the original 44 substances, 25 were found to be toxic. Regulations for four of the toxic substances—polychlorinated dibenzodioxins, polychlorinated dibenzofurans, effluents from pulp mills using bleaching, and 1,1,1-trichloroethane—have already been implemented in the Pulp and Paper Mill Defoamer and Wood Chip Regulations and Pulp and Paper Mill Effluent Chlorinated Dioxin and Furan Regulations, which came into effect in 1992, and the Ozone-Depleting Substances Regulations (1993). Of the remaining 21 substances found to be toxic, two—chloromethyl methyl ether and bis(chloromethyl) ether—were proposed for regulation, while the other 19 substances are subject to a Strategic Options Process that will determine measures needed to reduce exposure to them. Environment Canada and provincial governments, in cooperation with federal partners and affected stakeholders, are considering all options including voluntary, economic and regulatory instruments and will recommend the most appropriate responses for these substances.

The Government plans to finish assessing 100 substances by the year 2000. In April 1993, Environment Canada and Health Canada released for comment a proposal to revise the PSL using an open, science-based process to select substances. The proposal suggested a process for substance nomination, criteria for screening substances, and considerations for a Ministerial Expert Advisory Panel that would recommend a new list. The government's aim is to finalize the revised PSL in 1994-95 and to revise it again every three years.

Collecting Information

Sections 15 through 18 of CEPA allow the federal government to collect data and samples concerning the production, application and importation of substances.

National Pollutant Release Inventory

With a notice in the *Canada Gazette* requiring facilities to report releases and transfers of waste of 178 substances, the federal government initiated a National Pollutant Release Inventory (NPRI) in March 1993. The notice was based on recommendations made to the Minister by a Multi-Stakeholder Advisory Committee charged with developing criteria for the NPRI. Reports are now being received for the 1993 reporting year, from which the NPRI annual summary report will be prepared. Following publication of the summary report, all information, except confidential information, will be made available to the public by electronic means.

Environment Canada will continue to address outstanding issues identified in the Multi-Stakeholder Advisory Committee report and any other proposed changes to the program through consultation with Canadian stakeholders.

A second notice was published in the *Canada Gazette* in February 1994 for the 1994 reporting year.

Confidentiality Requests

In some circumstances, a person may submit a written request for confidentiality when providing information on toxic substances (Section 19). Section 20 provides for the non-disclosure of information that has been submitted with a request for confidentiality. Such requests are subject to certain terms and conditions.

Disclosing Information

Information collected under CEPA may be disclosed if it consists of

- general data on uses of a substance;
- occupational exposure studies;
- recommended methods for disposal and elimination of a substance;
- toxicological, clinical and ecological studies of a substance;
- safe handling precautions;
- physical and chemical data that do not reveal the identity of a substance;
- safety measures to be taken in case of accidents involving a substance;
- health and safety data;
- tests performed under CEPA; or
- test methods and results of product or environmental testing when carried out by, or on behalf of, a government institution, unless it was done for a fee as a service to other than a federal government institution.

In 1993-94, Environment Canada received 17 requests under the *Access to Information Act* for information related to CEPA, on the following subjects:

- import and export of hazardous waste;
- environmental regulations;
- CEPA prosecutions and convictions;
- PCBs;
- dioxin and furan regulations;
- the CEPA Federal-Provincial Advisory Committee; and
- the Canada-U.S. Air Quality Committee.

Environment Canada released complete or partial documents in response to four requests, and exempted or excluded documents related to four other requests. The Department was unable to locate information to respond to two requests. Five requests were abandoned or could not be processed. The Department treated one request informally, and one request is ongoing.

The Domestic Substances List

The Domestic Substances List is an inventory of more than 21,000 substances manufactured in or imported into Canada on a commercial scale between 1984 and 1986. Environment Canada published the first list in the January 1991 edition of the *Canada Gazette Part I*. In May 1994, it will publish a revised list in the *Canada Gazette Part II*, incorporating deletions, additions and corrections to the 1991 publication.

Environment Canada uses this list as its sole basis for determining whether a substance is "existing" or "new" to Canada. It also relies on the list when deciding whether substances require notification or assessment before they are manufactured in Canada or are imported into the country. Substances on this list are exempt from CEPA's New Substances provisions, as they are considered to be "in use" in Canada. However, existing substances that could cause adverse environmental or health effects are covered by Priority Substances List assessments.

In a new development, Environment Canada is considering the inclusion of biotechnology products on the Domestic Substances List. The Department has advised Canadian manufacturers and importers of this initiative and has assembled a provisional list of micro-organisms and products of organisms that meet the criteria for inclusion on the Domestic Substances List.

The Non-domestic Substances List

There are 41,000 substances on the Non-domestic Substances List known to be commercially available around the world, but not on the Canadian market.

This list recognizes substances that are not on the Domestic Substances List but are not new to world commerce. The Government requires less detailed information about these substances than about substances new to Canada.

Environment Canada chose the United States' 1985 Toxic Substances Control Act Inventory as a basis for this list. It deleted all substances on Canada's Domestic Substances List from the non-confidential portion of the U.S. inventory to produce the Non-domestic Substances List.

The list appeared, along with the Domestic Substances List, in the *Canada Gazette Part I* on January 26, 1991. Beginning in 1995, Environment Canada plans to update this list annually.

New Substances

Notification and assessment is required before substances not on the Domestic Substances List can be manufactured in or imported into Canada. The New Substances Notification Regulations will prescribe the information required from manufacturers and importers for this notification.

New Substances Notification Regulations: Chemicals and Polymers

The New Substances Notification Regulations for chemicals and polymers were published in the *Canada Gazette Part I* on May 1, 1993, followed by a 60-day period for public comment. The regulations will be published in the *Canada Gazette Part II* in April 1994 and will go into effect on July 1, 1994.

These regulations mark the beginning of CEPA's New Substances Notification Program. They require manufacturers and importers to supply specified information on new commercial substances, including chemical identity; toxicological and environmental effects data; manufacturing, processing and use data; and the volumes proposed for manufacture and import. Substances on the Non-domestic Substances List, however, have fewer notification requirements than other new substances.

New substances are divided into categories, such as site-limited intermediates, export only, and research and development substances. The characteristics of each category and any anticipated concerns determine the nature of the information required about new substances. The Government may require additional information or testing, impose controls, or ban the manufacture or importation of a substance if it suspects the substance is toxic.

Regulatory Impact Analysis Statement

Environment Canada developed a Regulatory Impact Analysis Statement for the New Substances Notification Regulations to evaluate potential costs and benefits associated with their implementation. The analysis examined such factors as annual costs to notifiers, administrative costs to industry, impacts on innovation, cost to the Government and anticipated benefits. It concluded that the increase in regulatory costs should not be a significant financial burden to industry and will result in various benefits for society.

Guidelines for the Notification and Testing of New Substances

Following the proposal of the regulations in the *Canada Gazette Part I*, the Guidelines for the Notification and Testing of New Substances: Chemicals and Polymers were completed. The guidelines explain why a substance is subject to notification and identify the applicable information requirements. As well, they provide step-by-step instructions for preparing notification documentation, identify appropriate test procedures and practices, and outline how to treat confidential information.

New Substances Notification Regulations: Biotechnology

Following public review, recommendations on New Substances Notification Regulations for Biotechnology Products included

- clarifying the scope of the regulations;
- adding biotechnology products to the Domestic Substances List;
- reviewing the information requirements; and
- making regulations "risk-based," rather than "stage-of-development-based."

These recommendations were included in draft New Substance Notification Regulations and a background document for biotechnology products prepared for a multi-stakeholder consultation in December 1992. Following the consultation, consensus changes were made to the draft regulations, and multi-stakeholder task forces were formed to address consortia, waste treatment, and fate and effects testing. Task force reports and the revised draft regulations were the subject of a second consultation in July 1993. A final consultation planned for early 1995 will address additional concerns and revision of the draft regulations. A Regulatory Impact Analysis Statement for the New Substance Notification Regulations dealing with biotechnology products will then be drafted, based on an assessment of the impacts associated with the regulations.

Confidential Business Information

Draft regulations have been developed for confidential business information submissions and for masking chemical names published on the Domestic Substances List and the Non-domestic Substances List for reasons of confidentiality. The Masked Names Regulations will be published in the *Canada Gazette Part II* in April 1 1994.

Good Laboratory Practice

In 1993-94, Environment Canada formed a Good Laboratory Practice (GLP) Compliance Monitoring Unit in response to an Organization for Economic Co-operation and Development (OECD) Council decision on the mutual acceptance of data for tests involving the health and safety evaluation of chemicals and a requirement in the New Substances Notification Regulations that will come into effect in July 1994. The GLP program will inspect domestic laboratories supplying test data for new substances notifications, determine the compliance status of foreign laboratories supplying similar data, and participate in ongoing OECD activities on the development and use of GLP in member countries.

In the near future, the GLP Compliance Monitoring Unit will prepare for public consultation on the development of a specific Canadian GLP program within the OECD framework, explore the development of bilateral and multilateral agreements on the mutual acceptance of data, and participate in OECD-related activities.

Creating Regulations

Regulations can be developed under various parts of CEPA. Before they have the force of law, CEPA regulations pass through many stages to allow time for public comment and close examination of implications. For hazards requiring immediate action, however, the Government may issue interim orders and temporarily by-pass the public consultation system.

Regulations typically begin with an assessment report that establishes a scientific basis for control. The Government considers a number of options before pursuing regulations, but where regulations are the preferred course of action, draft versions are developed and sent to a Cabinet committee following public consultation.

Proposed regulations appear in the *Canada Gazette Part I* with a Regulatory Impact Analysis Statement (RIAS) summarizing the purpose of the regulations, alternatives, benefits and costs, consultation, and enforcement and compliance. Following a 60-day period set aside for public comment, the Government finalizes the proposed regulations. After regulations are registered, they are in force and are published in the *Canada Gazette Part II*.

Throughout the decision-making process for all environmental protection initiatives, the government's approach to regulation takes socio-economic issues into account. This includes

- developing socio-economic background studies;
- assessing the effectiveness of alternative instruments for achieving environmental protection objectives; and
- evaluating and quantifying the benefits of the selected instruments.

These considerations provide for more informed decision making and improve the quality of the RIAS.

Strategic Options Process

Acting as partners, Environment Canada, Health Canada, provincial governments and other federal departments are using a multi-stakeholder consultative approach to develop effective and efficient options for managing CEPA toxic substances. To provide the best advice to accountable federal and provincial ministers, these partners are consulting key industry and non-governmental stakeholders. The primary principles of this approach are public participation, openness and transparency, disciplined cost effectiveness, flexibility, cross-sectoral equity, and harmonized management of CEPA toxics across federal and provincial governments.

Partners and stakeholders will consider a wide range of tools to achieve environmental and health objectives, including market-based tools (trading programs, taxes and charges, financial incentives, environmental liability and deposit/refund systems), voluntary actions (guidelines and multi-stakeholder protocols), information provision (environmental labelling, technology development and transfer, government reports/inventories, citizenship) and regulation.

In the first two years, partners and stakeholders will use this approach to develop options for action on substances declared toxic in the CEPA Priority Substance List Assessments. Then they will assess the process and refine it if necessary.

Regulatory Review

In 1993-94, Environment Canada reviewed 25 CEPA regulations in accordance with Treasury Board's government-wide review of regulations. An independent external panel was set up to advise the Department on the review process and to challenge the results. Regulations were assessed against criteria designed to facilitate collection of information about the objectives, control measures, and history of the regulations, and about comparable situations in the provinces, territories and other countries. The criteria were designed also to assist in analyzing the impacts of the regulations in terms of environmental sustainability, competitiveness, obsolescence, duplication, trade barriers, costs, benefits, and alternatives to the existing regulations.

Environment Canada published the findings in a discussion document in November 1993 and initiated public consultation at that time. The review did not raise any significant competitiveness issues. Such concerns were expressed only at a very general level and dealt with the overall burden of the total of regulations from all jurisdictions.

The review, however, did identify some areas of overlap and duplication with provincial requirements. Specifically, overlap exists where three older federal regulations dealing with the control of toxic air emissions were rolled over into CEPA from the *Clean Air Act*. As well, there is a partial overlap in the Storage of PCB Materials Regulations and the Pulp and Paper Mill Effluent Chlorinated Dioxin and Furan Regulations.

The review also identified many areas where there is no overlap. These areas include the regulation of federal lands and activities, ocean disposal, international waste transport and notification, product manufacturing, product prohibitions and product information gathering.

Environment Canada, through the Canadian Council of Ministers of the Environment (CCME) Harmonization Initiative and other multi-stakeholder processes, intends to investigate the response strategies for the regulations that the Review identified as overlapping to degree with provincial requirements. The Parliamentary review of CEPA, will also provide an opportunity to examine federal-provincial harmonization in developing environmental policy. The result will be a better integration of federal-provincial responses to environmental issues, perhaps with fewer federal regulations or with a readjustment of federal regulatory provisions.

In addition, the review identified opportunities to streamline, simplify and consolidate regulations. Environment Canada is pursuing the consolidation of three ozone-depleting substances regulations and three prohibited substances regulations. It will also conduct a feasibility study to examine the possibility of creating a consolidated PCB regulation. Work to determine whether or not two other regulations should be revoked is also under way.

The results of the regulatory review support the use of alternative instruments in place of or combined with regulations. The Department is currently supporting the development and use of a wider range of alternative instruments and strategies to achieve environmental objectives through the creation in 1994 of a multi-stakeholder Strategic Options Process. Through this process, the Department, in collaboration with key partners and stakeholders, will identify and evaluate a range of tools for meeting environmental objectives. The process explores beyond traditional command and control regulations and is focused on promoting harmonization between federal and provincial governments. The process will lead to recommendations on the most effective and efficient tools to achieve environmental objectives.

Recently Developed Regulations and Amendments

Twenty-five regulations are currently in place under CEPA. Over the past year, the Department brought one new regulation into force, made major revisions to one regulation, and continued work on several other regulatory initiatives. The Government also introduced an Omnibus Amendment Order during the year. It allows departments to make minor, non-contentious amendments with no policy implications through a streamlined process. Through the use of this Order, one regulation was amended and amendments to five other regulations were proposed.

CEPA Omnibus Amendment Order, 1992

The Omnibus Amendment Order allows departments to clean up various regulations requiring minor changes or corrections without following the normal lengthy regulatory process. Under the Omnibus Amendment Order published in the *Canada Gazette Part II* on June 2, 1993, the following regulations under CEPA were amended:

- Asbestos Mines and Mills Release Regulations;
- Chlor-Alkali Mercury Release Regulations;
- PCB Waste Export Regulations;
- Pulp and Paper Mill Effluent Chlorinated Dioxin and Furan Regulations; and
- Federal Mobile PCB Treatment and Destruction Regulations.

Amendments to CEPA Schedule III and Ocean Dumping Regulations

The London Convention 1972, to which Canada and 70 other countries are parties, has started an amendment process to address immediate and long-term disposal at sea issues. Aimed at strengthening safeguards of the marine environment, amendments to the Ocean Dumping Regulations are being made in two phases. The changes to the regulations are the result of consultation with industry, environmental groups, the provinces and other government departments.

The first phase of the regulatory amendments consisted of a revision of permit application fees and forms. More specifically, application fees were changed from a scale of $50 to $1,000 to a flat fee of $2,500 for all applicants, including federal government departments. Furthermore, in order to improve controls on ocean disposal, additional information concerning project justification, evaluation of alternatives and waste audit is now required. These amendments to the Ocean Dumping Regulations were published in *Canada Gazette Part II* on September 8, 1993 and came into force on September 30, 1993.

The second phase consists of proposed new environmental assessment procedures and standards to better account for effects on the marine environment.

Consultations were undertaken across Canada during October 1993 to begin preparations for the Phase II Regulatory Amendments. Changes that are being contemplated include

- replacing current chemical limits with guidelines based on no-effect data;
- adopting a tiered testing approach for evaluating materials for ocean disposal; and
- incorporating the Waste Assessment Framework of the London Convention 1972.

To implement the London Convention ban on ocean disposal of industrial and radioactive wastes, proposed amendments to the regulations and to CEPA were published in the *Canada Gazette Part I* on March 19, 1993. No objections were received during the 60-day comment period. Publication of the Order-in-Council in the *Canada Gazette Part II*, which will bring the changes into force, is anticipated in the fall of 1994.

As well, the Parliamentary Review of CEPA to begin in June 1994 will include consideration of changes to CEPA Part VI, including

- introducing a permit fee based on the type and quantity of material disposed;
- modifying Schedule III to reflect a reverse listing approach, if that approach is adopted by parties to the London Convention 1972;
- clarifying the definition of dumping; and
- harmonizing Part VI inspectors' powers with those under other parts of the Act.

In 1994-95, a socio-economic study will be undertaken to examine permit fees. An analysis of options and a study assessing the socio-economic impacts of the Phase II amendments will be prepared in fiscal year 1995-96, as will the draft Phase II amendments themselves. Publication of the draft and final amendments in the *Canada Gazette* is expected by 1996.

Ozone-Depleting Substances Regulations

The Montreal Protocol

In September 1987, Canada joined 23 nations in signing the United Nations Environment Programme Montreal Protocol on Substances that Deplete the Ozone Layer. The Protocol states that CFCs, halons and other substances deplete the atmosphere's ozone layer. As of February 28, 1994, 133 countries had signed it. They agreed to cooperate to prevent a global environmental and health crisis by implementing domestic regulations to control these substances.

In 1990, amendments to the Montreal Protocol accelerated the phase-out schedule for CFCs and halons to the year 2000, added methyl chloroform and carbon tetrachloride to the list of controlled substances, and provided financial support to help developing countries phase out ozone-depleting substances.

Two years later, at a meeting in Copenhagen, Denmark, parties to the Montreal Protocol agreed to phase out consumption and production of halons by January 1, 1994, and consumption and production of CFCs, methyl chloroform and carbon tetrachloride by January 1, 1996. Canada had already announced it would phase out production and consumption of carbon tetrachloride by January 1, 1995.

In Copenhagen, the parties also added hydrobromofluorocarbons (HBFCs), hydrochlorofluorocarbons (HCFCs) and methyl bromide to the list of controlled substances. In addition, Canada chaired a sub-committee to develop a list of acceptable destruction procedures for ozone-depleting substances. The final report was tabled and accepted at the Copenhagen meeting.

CEPA Regulations and Amendments

Regulation	*Publication in Canada Gazette Part II*
Ocean Dumping Regulations, 1988 Amendment	September 1993
CEPA Omnibus Amendment Order, 1992	June 1993
Ozone-Depleting Substances Regulations No. 4	May 1993
Export and Import of Hazardous Waste Regulations	December 1992
Toxic Substances Export Notification Regulations	December 1992
Vinyl Chloride Release Regulations (revision)	December 1992
Pulp and Paper Mill Defoamer and Wood Chip Regulations	May 1992
Pulp and Paper Mill Effluent Chlorinated Dioxin and Furan Regulations	May 1992
Storage of PCB Materials Regulations	May 1992
Contaminated Fuels Regulations	August 1991
Chlorobiphenyls Regulations	March 1991
Secondary Lead Smelter Release Regulations	March 1991
Ozone-Depleting Substances Regulations No. 2 (freeze consumption of halons)	September 1990
Ozone-Depleting Substances Regulations No. 3 (prohibit certain uses of CFCs and halons)	September 1990
PCB Waste Export Regulations	August 1990
Asbestos Mines and Mills Release Regulations	July 1990
Gasoline Regulations	May 1990
Chlor-Alkali Mercury Release Regulations	February 1990
Mirex Regulations	February 1990
Polychlorinated Terphenyl Regulations	February 1990
Chlorofluorocarbon Regulations	February 1990
Polybrominated Biphenyl Regulations	February 1990
Federal Mobile PCB Treatment and Destruction Regulations	January 1990
Phosphorus Concentration Regulations	November 1989
Ocean Dumping Regulations	November 1989
Ozone-Depleting Substances Regulations No. 1 (reduce consumption of CFCs)	July 1989
Fuels Information Regulations No. 1	August 1977

Domestic Regulations to Support International Commitments

Canada has earmarked more than $9 million to accelerate the phase out of ozone-depleting substances.

Environment Canada, authorized by CEPA, regulates the production, import and export of ozone-depleting substances, including CFCs, halons, methyl chloroform and carbon tetrachloride, as well as certain products containing CFCs.

The federal government is amending its regulations to reflect its current domestic and international commitments. The following is a short description of the current contents of these regulations.

Ozone-Depleting Substances Regulations

The amalgamated and amended Ozone-Depleting Substances Regulations will come into force in June 1994. These regulations control the import, manufacture, use, sale and export of bulk ozone-depleting substances. They reflect the commitments Canada has made regarding production and consumption of ozone-depleting substances. Note that consumption is equal to the amount of a substance produced domestically plus the amount imported, less the amount exported.

Canada has made the following commitments:

- CFCs:
  - 75 percent reduction by January 1, 1994
  - 100 percent elimination by January 1, 1996
- halons:
  - 100 percent elimination by January 1, 1994
- carbon tetrachloride:
  - 100 percent elimination by January 1, 1995
- methyl chloroform:
  - 50 percent reduction by January 1, 1994
  - 85 percent reduction by January 1, 1995
  - 100 percent elimination by January 1, 1996
- HBFCs:
  - 100 percent elimination by January 1, 1996

These regulations prohibit the use or sale of a controlled substance that was illegally imported or manufactured after its phase-out date. They also establish requirements for obtaining permits for the import and export of used, recovered, recycled and reclaimed ozone-depleting substances.

Ozone-Depleting Substances Products Regulations

The Ozone-Depleting Substances Regulations No. 3 (products) will be amended to the Ozone-Depleting Substances Products Regulations. These regulations prohibit the manufacture, import, sale and offer for sale of

- plastic foam packaging material or containers in which any CFC has been used as a foaming agent; and
- pressurized containers that contain 10 kilograms or less of CFCs. Products affected by this prohibition include aerosols, cans of refrigerant (less than 10 kilograms), novelty products and fog horns.

Health care products are exempted from these regulations. The regulations also prohibit the import of certain products containing ozone-depleting substances from non-parties to the Montreal Protocol as required by the Protocol.

The development of strategic options reports for HCFCs and methyl bromide, including the use of market-based instruments, is ongoing. Consultations on control options took place in June 1993 for HCFCs, and in November 1993 for methyl bromide. Draft amendments to incorporate methyl bromide controls into existing regulations will be distributed to stakeholders in April 1994.

Release of Toxic Substances

Sections 36 through 38 of CEPA address the dangers posed by the release of toxic substances into the ecosystem. CEPA provides for reporting and precautionary measures, including the notification of inspectors and of any member of the public who may be adversely affected by the impending threat.

Recovery of Reasonable Costs

When the Department must step in to control the release of toxic substances, CEPA makes provisions for the recovery of costs. Under Sections 39, 60 and 77, when polluters fail to take preventive measures to correct their contravention of a CEPA regulation or interim order, the federal government may take action and reclaim expenses. Environment Canada has not yet had reason to invoke these sections.

Export and Import of Hazardous Wastes

According to Section 43 of CEPA, "hazardous waste" is a waste dangerous good within the meaning of the *Transportation of Dangerous Goods Act* and Regulations, or any substance included on Environment Canada's list of hazardous wastes requiring export and import notifications. This section allows the Minister of the Environment to

- determine which hazardous wastes require import and export notification;
- decide which hazardous waste authorities importers and exporters must notify; and
- regulate the contexts of the notice and conditions under which a person may import or export a hazardous waste.

The Export and Import of Hazardous Waste Regulations came into force in November 1992. They regulate the transportation into and out of Canada of hazardous wastes destined for recycling or disposal. They also allow Canada to meet its international obligations to control the transboundary movement of hazardous wastes.

Environment Canada and Canada Customs inspectors attended a comprehensive training program on the regulations in the fall of 1992. Both departments have also implemented programs to inform regulated industries of their responsibilities under the regulations.

An amendment to these regulations was published in the *Canada Gazette Part I* on July 31, 1993. Among other changes, the amendment would permit electronic transmission of advance notice. The amendment will be published in the *Canada Gazette Part II* in July 1994.

The Basel Convention

When the Export and Import of Hazardous Waste Regulations were introduced in Canada in November 1992, the Basel Convention on the Transboundary Movements of Hazardous Wastes and their Disposal came into force in this country. The Convention aims to

- decrease the amount of hazardous waste generated;
- ensure that hazardous waste is disposed of in the country of generation, where possible;
- establish stricter controls on imports and exports of hazardous waste;
- prohibit exports of hazardous waste to countries lacking the legal, administrative and technical capacity to manage and dispose of it safely;

Timetable of Planned Regulations

Regulatory Initiative and Expected Year of Publication in Canada Gazette Part II

1994-95

Environmental Protection Boards of Review Rules
New Substances Notification Regulations (Part I – New substances other than biotechnology products or polymers, and Part II – Polymers)
Asbestos Mines and Mills Release Regulations, Amendments*
Masked Names Regulations
Ozone-Depleting Substances Regulations**
Ozone-Depleting Substances Products Regulations***
PCB Regulations, Amendments
Export and Import of Hazardous Waste Regulations, Amendments
CEPA Omnibus Amendment Order, 1993-1

- Asbestos Mines and Mills Release Regulations
- Chlor-Alkali Mercury Release Regulations
- PCB Waste Export Regulations
- Secondary Lead Smelter Release Regulations
- Pulp and Paper Mill Defoamer and Wood Chip Regulations

Gasoline Regulations, Amendment
Fuels Information Regulation No. 1, Amendment
Confidential Information Regulations
Amendments to CEPA, Schedule III and Ocean Dumping Regulations

1995-96

Ocean Dumping Regulations, Amendments - Phase II
CEPA Omnibus Amendment Order, 1994-1

- Chlorofluorocarbon Regulations, 1989
- Vinyl Chloride Release Regulations, 1992
- Storage of PCB Materials Regulations, 1992
- Masked Name Regulations
- Gasoline Regulations Amendments

Unscheduled

Secondary Lead Smelter Release Regulations, Amendments*
Good Laboratory Practice Regulations
Hazardous Waste Management at Federal Facilities
Spill Reporting Regulations

* Presently under departmental regulatory review
** Amalgamation and amendment of Ozone-Depleting Substances Regulation No. 1, 2 and 4.
*** Amendment to Ozone-Depleting Substances Regulation No. 3 (products)

- forbid exports to countries that have banned imports; and
- promote technology transfer, information exchange, and harmonized standards, guidelines and codes.

The Basel Convention also supports the continued application of bilateral agreements that do not inhibit environmentally sound management of hazardous wastes. The Canada-United States Agreement on the Transboundary Movement of Hazardous Wastes, which governs most Canadian hazardous waste shipments to and from the United States, is one such agreement.

In late 1992, Canada attended the first meeting of the parties to the Basel Convention in Uruguay to start implementing the Convention's objectives. In March 1994, Canada attended the second meeting of the parties to the Basel Convention. This meeting resulted in 28 decisions. One decision calls for a ban on the export of hazardous wastes for final disposal from OECD countries to non-OECD countries. It also calls for a phase-out of such exports destined for recycling/recovery operations by December 31, 1997.

CEPA Part III: Nutrients

Sections 49 to 51 of CEPA define and help to regulate cleaning agents, nutrients and water conditioners. Inspections continued under the phosphorus concentrations regulations.

CEPA Part IV: Controls on Government Organizations

Under Part IV of CEPA, the Minister of the Environment has the authority to regulate waste handling and disposal practices, and emissions and effluents from federal department, Crown corporation and federal agency activities. It also gives the Minister the authority to make regulations and guidelines that apply to federal lands, works and undertakings where there is no express authority under the Act of Parliament governing that land, work or undertaking, to make regulations to protect the environment.

During fiscal year 1993-94, action on the following initiatives directed at the federal government took place:

- glycol guidelines for de-icing practices at federal airports were promulgated under Section 53 of CEPA;
- a code of good practice for the handling, storage, use and disposal of pesticides at federal facilities was published;
- *Guidelines for Environmental Auditing: Statement of Principles and General Practices* was published as a national standard using the Canadian Standards Association's multi-stakeholder process;
- an environmental issues workshop was held to provide federal employees with environmental information and training opportunities; and
- an interdepartmental steering committee on environmental issues for the federal sector was created to provide coordinated strategic direction on key policy and process issues.

The Federal Code of Environmental Stewardship

Under this 1992 initiative, federal government departments were directed to conform to the requirements of CEPA and other federal environmental legislation, and to make their operations compatible with other levels of government where appropriate. Various federal departments are developing environmental action plans.

In support of environmental stewardship, the following regulatory initiatives under CEPA IV have been under review:

- atmospheric emission controls for boilers at federal facilities;
- non-hazardous solid waste incinerators at federal facilities;
- spill reporting;
- contingency planning at federal facilities;
- landfill operations on federal lands and at federal facilities; and
- wastewater management on federal lands and at federal facilities.

CEPA Part V: International Air Pollution

CEPA Part V gives the Minister of the Environment authority to regulate domestic sources of pollution that create air pollution in other countries or violate international agreements or threaten to do either. The Minister can exercise this authority only if the provinces are unable or unwilling to control pollution sources. To date, such action has not been necessary.

The federal, provincial and territorial governments have signed a Comprehensive Air Quality Management Framework For Canada. The Framework establishes a cooperative mechanism to coordinate government action on air quality issues. Under the Framework, the federal government has agreed to ask the provinces and territories for advice when developing and negotiating international air quality commitments and agreements.

Sulphur Dioxide Protocol

Canada has exceeded the requirements set out in the first Sulphur Dioxide Protocol signed in 1985. In 1993, emissions totalled about 3.1 million tonnes. This level is more than 30 percent below the 4.6 million tonnes emitted in 1980. To achieve the protocol target, Canada relied heavily on coordinated action between the federal and provincial governments. Canadian standards now require major new emission sources to use advanced control technologies.

Negotiations continued on the Second Sulphur Dioxide Protocol to the United Nations Economic Commission for Europe Convention on Long Range Transboundary Air Pollution. Issues under discussion include Canada's proposal to allow nations to commit to regional, rather than national, sulphur dioxide caps, which will enable different ecosystems to be more appropriately protected from acidification.

NOx and VOC Protocols

Reducing the level of pollutants that cause ground-level ozone is one of Canada's key environmental objectives. To this end, in 1988 Canada signed and ratified an international protocol that calls for a reduction of Canadian NOx (nitrogen oxides) emissions to 1987 levels by 1994. In addition, in 1991 Canada signed a protocol calling for a freeze in national VOC (volatile organic compound) emissions to 1988 levels by 1999. The federal government has also committed to reducing VOC emissions to 70 percent of 1988 levels by 1999 in selected emission management areas. To date, Canada has established measures to achieve the national targets and about 20 percent of the regional reduction target. These commitments are based on a domestic NOx/VOC Management Plan developed by federal, provincial and territorial governments.

The Canada-United States Air Quality Agreement

The Canada-United States Air Quality Agreement, in order to protect both countries from transboundary air pollution, has created a bi-national forum for verifying and reporting progress on air quality issues. The Agreement improves air quality monitoring, reporting, and research and development.

Canada has had marked success in fulfilling the obligations set out in the Agreement. Canadian sulphur dioxide emissions in 1993 were below the target of 3.2 million tonnes set out for the year 2000. Canada is progressing in efforts to harmonize the gathering and reporting of emissions data, and is working with the United States to develop programs to protect each country from air quality degradation due to pollution flowing across the border.

A second progress report on the Agreement will be published in the summer of 1994.

CEPA Part VI: Controlling the Disposal of Substances at Sea

Canada is committed to tough and effective controls on ocean disposal. Part VI of CEPA, through which the federal government implements the provisions of the London Convention, 1972, regulates

- the disposal of all types of material at sea, including destruction at sea by incineration; and
- the loading of wastes on ships, aircraft, platforms, or other fabricated structures for disposal at sea.

Permits for Ocean Dumping

Environment Canada regulates the disposal of substances at sea and meets its international obligations under the London Convention 1972 by means of a system of permits under CEPA and the Ocean Dumping Regulations. Each application for disposal at sea is separately evaluated to determine if a permit will be issued. Disposal at sea is permitted only for non-hazardous substances and where it is the environmentally preferable and practical alternative. Permits are not granted if practical opportunities are available to recycle, reuse or treat the waste.

Permits usually govern timing, handling, storing, loading, placement at the disposal site and monitoring requirements. If the proposed disposal activity is prohibited under any Act of Parliament, or if a licence or permit required under any other Act has not been obtained, Environment Canada will not grant a permit. The Ocean Dumping Regulations ensure that the federal government is taking a comprehensive approach to waste management and pollution prevention.

Anyone applying for a permit from Environment Canada must publish a notice of intent in a newspaper of general circulation in the vicinity of the proposed operation. This notice must state the type of material and the intended location for loading and disposal. The applicant then submits this published announcement with a permit application. The notice of intent allows interested people to express their concerns and gives Environment Canada the chance to address these concerns while assessing applications. Before any ocean disposal permits and amendments to a permit come into force, they must be published in the *Canada Gazette*.

Environment Canada considers a number of factors before granting a permit, including

- waste audits;
- alternatives to ocean disposal;
- potential environmental impacts; and
- conflicts with other legitimate uses of the sea.

Inert or uncontaminated materials of natural origin are considered suitable for ocean disposal. Most ocean disposal consists of dredged material that must be moved to keep shipping channels and harbours clear for navigation and commerce. Fish waste that cannot be recycled as fertilizer, animal feed or other products may be considered suitable for ocean disposal. Other wastes that applicants may be permitted to dispose of at sea include scrap metal and decommissioned vessels.

The Department carries out inspections or investigations to ensure compliance. It uses disposal site monitoring to verify that permit conditions are met and that assumptions made during the permit review and site selection process were correct and sufficient to protect the environment.

Permits Granted in 1993-94

During 1993-94, Environment Canada issued 216 permits for the disposal of an estimated 7.5 million metric tonnes of material. This figure does not represent the actual quantity of material disposed of at sea, but rather the amount approved for disposal. Activities are still ongoing for many permits issued.

Seventy-nine permits, or almost 37 percent of the permits issued, were for the disposal of dredged material containing rocks, gravel, sand, silt, clay and wood wastes. This figure is the same as the 1992-93 total. The volume approved for disposal decreased marginally by 3 percent, from 6.9 million tonnes in 1992-93 to 6.7 million tonnes this year. The quantity of dredged material approved for disposal varies each year and depends on the number of dredging projects that exceed 100,000 cubic metres (m^3) or 130,000 tonnes.

Another 58 percent of the permits issued covered the disposal of fisheries waste, including offal, shells, herring waste and fish processing wastewater. While fisheries waste accounted for 126 permits, the quantity approved for dumping amounted to only 98,394 tonnes or about 1.2 percent of the total waste approved for disposal.

Excavation material from construction sites on land, mostly soil and rocks, accounted for only two permits, or about 1 percent of all permits issued, and made up about 0.65 million tonnes or 8 percent of the waste approved for disposal.

Other permits issued in 1993-94 included four to sink vessels, one to dispose of a cargo of sugar spoiled by sea-water, one to dispose of brine solution and one for an oil spill experiment. These permits accounted for 4 percent of those issued and 0.5 percent (39,324 tonnes) of the total quantity of waste approved for disposal.

Newfoundland Offshore Burn Experiment

One option for dealing with oil spills has been burning the oil on site. However, data on the impacts involved in this method have been limited to laboratory-scale tests. In August 1993, Environment Canada led a multi-million dollar project involving 25 supporting agencies and private industry to conduct an experimental burn of a simulated oil spill off the coast of Newfoundland. Preliminary results show that burning is a viable way to reduce the impact of oil contamination. Monitoring for long-term effects of the burn is continuing.

Permits Screened or Rejected in 1993-94

Environment Canada rejected four applications and revoked one permit in the past year for various reasons. The four rejected applications—two for dredged material, one for fish offal, and one to sink a vessel—were denied because the applicants had provided insufficient information.

On April 14, 1993, the Minister revoked a permit issued to Panarctic Oils Ltd. to dispose of 400 tonnes of scrap metal in the Arctic Ocean, off Lougheed Island. The decision was taken in response to concerns expressed by residents of Grise Fiord, Resolute Bay, Arctic Bay and Pond Inlet. Instead of disposing of the material at sea, a research project has been initiated to evaluate the environmental impact of stockpiling scrap metal on land in the Arctic.

Regional Forecasts

In the Atlantic Region, the number of permits for dredging is expected to increase as the historical 10-year dredging cycle continues. For fisheries waste, a 60 percent drop in the permits issued is expected because of the continuing cod and capelin moratorium. The increased fee of $2,500 (from $50) should further reduce the demand for fish waste permits, as it may become more economically attractive for a number of fish plants to either recycle their waste through fish meal plants or combine their sea disposal operations where no recycling opportunities exist.

Quantities for Permits Issued, 1993-94

Material	*Quantity Permitted (tonnes)*	*Permits Issued*	*Percentage of Permits*	*Percentage of Quantity*
Dredged Material	6,738,905	79	36.57	89.53
Fisheries Waste	98,394	126	58.33	1.31
Vessels	4,812	4	1.85	0.06
Excavated Material	650,000	2	0.93	8.64
Spoiled Sugar	305	1	0.46	>.01
Brine Solution	34,200	1	0.46	0.45
Scrap Metal	0	0	0.00	0.00
Fish Load only	0	2	0.93	>.01
Oil Spill Experiment	7	1	0.46	>.01
Total	7,526,623	216	100	100

Notes: Figures for dredged and excavated material are calculated assuming an average density of 1.3 tonnes per cubic metre.
The total quantity figures for fisheries waste do not include the 2 "load only" permits issued to control the loading activities for these wastes.

Quantities Permitted by Region, 1993-94

Material	*Atlantic Region* No. of Permits	Permit Quantity	*Pacific Region* No. of Permits	Permit Quantity	*Quebec Region* No. of Permits	Permit Quantity	*Northern Region* No. of Permits	Permit Quantity
Dredged Material	26	2,379,130	22	4,044,500	30	303,575	1	11,700
Fisheries Waste	126	98,394	0	0	0	0	0	0
Excavated Material	0	0	2	650,000	0	0	0	0
Vessels	3	4,799	0	0	1	13	0	0
Spoiled Sugar	0	0	1	305	0	0	0	0
Brine Solution	1	34,200	0	0	0	0	0	0
Fish Load only	2	n/a	0	n/a	0	n/a	0	n/a
Oil Spill Experiment	1	0	0	0	0	0	0	0
Total	159	2,516,530	25	4,694,805	31	303,588	1	11,700

Notes: Figures for dredged and excavated material are calculated assuming an average density of 1.3 tonnes per cubic metre.
The total quantity figures for fisheries waste do not include the 2 "load only" permits issued to control the loading activities for these wastes.

In the Quebec Region and the Pacific and Yukon Region, moderate increases in maintenance dredging are expected to make up for projects postponed because of the slow economy.

No dredging applications are expected in the Prairie and Northern Region for Arctic waters because of the decrease in offshore oil and gas activities and reduced government spending.

Research to Support Ocean Dumping Regulations

Environment Canada continues to improve the tools it uses to assess materials intended for disposal at sea. Bioassays are becoming standard tools for assessing the effects of marine contaminants, and researchers are making good progress in developing sediment bioassays.

Three Canadian sediment bioassays to evaluate sea urchin reproduction, crustacean mortality and fluorescence from photoluminescent bacteria have been published. As well, researchers are expected to complete a bioassay that examines changes in the growth of marine worms. A sediment test for bioaccumulation of trace contaminants is being developed based on a test developed in the United States.

A protocol to develop marine sediment quality guidelines has been developed, and guidelines for PAHs, cadmium and mercury are expected shortly. Guidelines for PCBs, lead, copper, zinc, arsenic, nickel, chromium and dioxins should be completed by the end of this fiscal year. They will allow the Department to establish contaminant screening levels at the "no-effect" concentration level. These screening levels are part of a tiered testing approach to assessing materials for ocean disposal. Where materials are found to have concentrations of contaminants above screening levels, bioassays would be required to evaluate their suitability for ocean disposal. Eventually, Environment Canada will establish rejection levels or levels above which adverse effects have been demonstrated to occur. Above rejection levels, the Department would not allow ocean disposal.

Special research projects occasionally arise from unique ocean disposal activities. In December 1992, a permit was issued to sink the 2,370-tonne HMCS *Chaudière*, a Tribal Class destroyer, which is now a diving attraction north of Vancouver. A program was instituted to observe any effects at the disposal site and data acquired during the summer of 1993 showed the old destroyer is now a habitat for a wide variety of marine life. As well, no evidence of chemical contamination in the water and nearby sediments has been found.

As a result of the April 1993 decision to revoke a permit to dispose of scrap metal issued to Panarctic Oils Ltd., a research project has been initiated to evaluate the environmental impact of stockpiling scrap metal on land in the Arctic. This research will provide valuable data on this potential waste-disposal option in the North.

International Activities

In November 1993, Canada and 71 other member countries of the London Convention 1972 agreed to ban the disposal of industrial and radioactive wastes at sea.

Member countries are considering further amendments to the London Convention 1972. Negotiations have begun that will likely lead to final changes to the Convention by 1996. Some possible changes include

- adoption of the Waste Assessment Framework;
- adoption of the precautionary approach; and
- application to internal marine waters.

CEPA Part VI already includes Canada's internal marine waters, and the Waste Assessment Framework was used as the basis for the new CEPA application form for disposal at sea. The Waste Assessment Framework sets out a scientific and precautionary process for evaluating a substance proposed for ocean disposal.

Ocean Dumping Action Plan

Environment Canada established the Ocean Dumping Control Action Plan in November 1991. This initiative devotes additional resources to safeguarding the marine environment over six years. Specifically, funds will be directed toward

- revision of the regulations;
- improved monitoring;
- improved support for science;
- research; and
- a plastic debris program.

During the three years since this plan was implemented, the Department has progressively developed and field-tested monitoring guidelines and phased them into routine disposal site monitoring. Interim Monitoring Guidelines covering physical and chemical aspects were published in July 1993 and Biological Monitoring Guidelines will be added in 1994-95. These guidelines address disposal of dredged material only. Consideration will be given to including other materials in the future. Field testing of these guidelines is ongoing at three disposal sites: one on the Pacific coast and two on the Atlantic coast.

As discussed earlier, new marine environmental quality guidelines and biological assessment tools are also being developed to support the Ocean Dumping Regulations.

Under the marine plastic debris program, preliminary surveys to select long-term survey sites have been completed. The training of volunteers to conduct these long-term surveys will begin in the late summer 1994, with surveys beginning in the fall. As well, information products, including a newsletter and a fact sheet, are now available.

Though the Canadian marine environment is relatively uncontaminated by world standards, Canada's territorial waters do have some problems, especially in harbours, estuaries and near-shore areas. Part VI of CEPA, which regulates disposal at sea, is one of the measures in place to protect Canada's marine environment and promote pollution prevention.

CEPA Part VII: General Information

Notices of Objection and Boards of Review

The public may file a "notice of objection" to a decision or proposed regulation.

Because CEPA is organized by subject areas, guidelines or notices of objection appear in numerous sections of the Act. For example, Section 51(2) covers notices dealing with nutrients, while Section 62(2) details notices related to controls on international air pollution, and Section 74 addresses objections relating to ocean dumping permits. Each subject area has its own administrative requirements for notices of objection.

Under procedures set out in Sections 89 to 97 of CEPA, the Ministers may establish a board of review to examine a notice of objection. To date, the federal government has not established any boards of review, although some notices of objection have been filed.

Environment Canada has developed procedural rules to govern matters such as administration, written submissions, evidence, confidentiality of documents, public access, conduct of hearings and reporting. The "Administrative Rules for Environmental Protection Boards of Review" were published in the *Canada Gazette Part I* on December 19, 1992. Publication of the final rules in the *Canada Gazette Part II* is expected in the fall of 1994.

Enforcement and Compliance

Laws must be effectively enforced. Enforcement must be fair and nationally consistent. All people responsible for administering legislation and those who comply with it must know what is expected of them. These are the reasons that Environment Canada developed an Enforcement and Compliance Policy for CEPA. This policy, prepared in cooperation with the Department of Justice, guides Environment Canada in the enforcement of CEPA and its regulations. While conducting inspections to verify compliance with the regulations, inspectors follow the policy and determine how to respond to a violation. They consider, among other things, the nature of the offence, the violator's willingness to comply and the violator's past compliance history.

Stronger Enforcement Mechanisms

The Minister of the Environment announced the Enhanced Enforcement Program, designed to strengthen the government's ability to enforce environmental laws, in December 1991. The Program provides additional resources to help enforce CEPA regulations and the pollution prevention provisions of the *Fisheries Act*.

The funds will also enable Environment Canada to develop specialized training courses; negotiate agreements and work-sharing arrangements with the provinces, territories and other federal departments; and create an integrated, computerized information system to support enforcement.

Creation of the Office of Enforcement

Environment Canada created the Office of Enforcement in July 1991 to respond to increasing demands for enforcement and to ensure consistency and uniformity in enforcement actions across the country.

Some of this office's responsibilities include

- providing overall functional direction for investigations, inspections and other enforcement actions;
- developing and monitoring the annual National Inspection Plan;

- developing enforcement training courses;
- delivering the annual National Training Program to inspectors and investigators;
- reviewing new regulations; and
- developing a management information system.

Inspections

Inspectors verify compliance with CEPA and accompanying regulations. As part of this job, they may conduct inspections; witness compliance tests; check records, files and other documents required by regulation to be maintained; sample substances, effluents and emissions; and check data and reports filed with Environment Canada.

Investigations

Both investigators and inspectors examine suspected violations. When they decide that a violation has occurred, they take enforcement action in accordance with the CEPA Enforcement and Compliance Policy.

In 1993-94, most enforcement actions were **warnings**, given when the degree of harm or potential harm to the environment, human life or human health appeared to be minimal.

When there is an actual or potential release of a substance in contravention of CEPA regulations, enforcement officers use **directions**. CEPA requires that parties owning, managing or controlling substances take reasonable emergency measures to remedy any dangerous condition, or to reduce any danger to the environment, human life or human health that resulted, or may result, from a release. When they fail to take necessary measures to protect the public, inspectors or investigators issue directions.

When an alleged violation meets the criteria of the CEPA Enforcement and Compliance Policy, enforcement officers undertake investigations leading to **prosecutions**.

CEPA Section 108: Applications for Investigations

One of the guiding principles of CEPA's Enforcement and Compliance Policy is to encourage people to report suspected violations to enforcement officers.

Under Section 108 of CEPA, any two residents of Canada (18 years of age or older) who believe that an offence has been committed under CEPA may ask the Minister of the Environment for an investigation of the alleged offence.

The alleged offence must meet conditions set out in Section 108 before an investigation can begin. If the alleged offence meets these conditions, Section 109 requires that an investigation take place to determine the facts relating to the alleged offence. Within 90 days, the Minister of the Environment must report to the applicants on the progress of the investigation and the proposed action.

One investigation was pursued under Section 108 during the past year. No violation of CEPA was found. The investigation of fish contamination in Lake Laberge requested by three Yukon residents in 1991 is still ongoing under Section 108.

Uniform Enforcement Guidelines

In 1993-94, Environment Canada continued drafting Uniform Enforcement Guidelines for regulations. These guidelines will complement CEPA's Enforcement and Compliance Policy by outlining more precisely which enforcement measures are most appropriate for which violations. They will also further Environment Canada's goal to enforce federal environmental legislation consistently, uniformly, fairly and predictably.

National Inspection Plan

The National Inspection Plan, an annual work plan, identifies the number and types of inspections to be carried out under CEPA regulations. A collaboration between staff at Environment Canada's headquarters and regional offices, the plan uses a target-oriented approach to focus on the most serious environmental threats in each region. In implementing the NIP, Environment Canada carries out inspections, verifies documents and data submitted by regulatees in compliance with regulatory requirements, and evaluates compliance testing results.

National Training Program

Training is a major focus for departmental staff because it is an essential component of Environment Canada's enhanced enforcement program. To ensure that enforcement officers and analysts are trained in duties ranging from basic inspection and investigation skills to very specialized regulation-specific enforcement activities, the National Training Program has been expanded.

In 1993-94, Environment Canada delivered courses on

- Ozone-Depleting Substances Regulation No. 4;
- Vinyl Chloride Regulations;
- Petroleum Refineries Regulation; and
- Inspection (revised course).

Environment Canada has continued to develop a health-and-safety reference book, a safety training program, and a National Sampling Protocol for both inspectors and investigators. It also participates in a federal-provincial working group to study ways of combining training and resources.

Internationally, Environment Canada helped to present a course in Mexico in February 1994. This participation was made under the agreement on environmental cooperation between the Government of Canada and the United Mexican States.

Computerized Information System

In 1993-94, the Office of Enforcement was actively involved in the design and development of the Enforcement Activities Tracking System (EATS). The parties involved completed the following phases of EATS' development:

- general design, which included expanding the findings of the feasibility study conducted in 1992-93, producing a functional description of manual and automated processes, and developing an overall system design;
- detailed design, which included producing an initial prototype and developing detailed design elements for key enforcement activities; and
- final prototype, which involved completing detailed design elements and developing a final prototype.

A committee with members from the regions and headquarters provided advice and guidance on enforcement activities and ensured regional input into system design and development throughout the process.

Enforcement Activities

The following table shows 1993-94 enforcement activities under CEPA. It does not include related offences under the *Fisheries Act;* however, this information is available from the Office of Enforcement by calling 819-994-0497.

Enforcement Activities (1993-94)

Regulations	*Inspections*	*Investigations*	*Warnings*	*Directions*	*Prosecutions*	*Convictions*
PCB Waste Storage	417	16	70			
PCB Regs.	296	3	13			
PCB Waste Export Regs.	13	1	2			
PCB Destruction	5					
Secondary Lead	37		4			
Vinyl Chloride	8					
Asbestos Mines and Mills	26					
Chlor-Alkali Mercury	9					
Chlorofluorocarbon						
Domestic Substances List	1					
Gasoline	11	2				3
Contaminated Fuel	1					
Fuels Info Reg.		2				
Ozone-Depleting Substances Regs. No. 1	15	6	1			1
Ozone-Depleting Substances Regs. No. 2	10	1				
Ozone-Depleting Substances Regs. No. 3	323	9	15			
Ozone-Depleting Substances Regs. No. 4	4				1	2
Ocean Dumping	55	10	5	1	2	4
Export-Import Hazardous Waste	199	5	10			
Phosphorus Concentration Regs.	23					
Dioxins and Furans	50					
Defoamer and Wood Chips	45					
Total	1,548	55	120	1	3	10

Prosecutions (April 1, 1993-March 31, 1994)

Company Name and Address	*Status*	*Offence Date and Location*	*Date Charged*	*Sections/ Offence*	*Court Date*	*Result*	*Penalty*	*Notes*
Atlantic Region								
Ocean Pride Fisheries Ltd. Milton Leblanc & Roy LeBlanc	Concluded	93/08/05 Wedgeport, N.S.	93/08/30	CEPA 67(1) Ocean Dumping 2 Counts Dog fish offal dump, not in accordance with permit	94/01/17	Guilty Plea by company Charges against individuals were withdrawn	$3,000 fine	
Quebec Region								
Madelimer Inc. 18, Road 199 - C.P. 39 Iles-de-la-Madeleine, Québec	Concluded	May 22 to June 22, 1993 Iles-de-la-Madeleine, Québec	94/02/11	CEPA 67(1)(a) Ocean Dumping Dog fish offal dump, not in accordance with permit	94/06/22	Guilty Plea	$5,000 fine	
Rosgol Industries Ltd 2175 Orleans Ave. Montreal, Québec	For Trial	December/92 Montreal, Québec	93/06/25	CEPA Illegal importation, offer for sale and sale of products containing CFCs	94/10/28			Pro Forma appearance 94/10/28
Ontario Region								
No prosecution under CEPA in 1993-94								
Prairie and Northern Region								
No prosecution under CEPA & FA in 1993-94								
Pacific and Yukon Region								
No prosecution under CEPA & FA in 1993-94								

Health Canada's Contributions under CEPA

While CEPA's general intent and the joint achievements of Environment Canada and Health Canada have been fully described elsewhere in this report, the following section summarizes Health Canada's major achievements under CEPA during the past year. Most of the work has been undertaken by the staff of the Environmental Health Directorate of the Health Protection Branch.

Health Canada is jointly responsible with Environment Canada for assessing and managing the risks to human health from toxic substances. CEPA includes detailed provisions for dealing with potential health risks from existing and new substances, as well as from hazardous wastes.

Environmental Quality (CEPA Part I)

Section 8 of CEPA, which deals with ensuring the quality of the environment, gives the Minister of the Environment responsibility for formulating environmental quality objectives, guidelines and codes of practice. The Minister of Health has similar authority to preserve and improve public health under Section 9.

As part of this mandate, Environment Canada and Health Canada are working together to develop National Ambient Air Quality Objectives for a number of air pollutants. As part of the Federal-Provincial Working Group on Air Quality Objectives and Guidelines, work has been undertaken to develop a more consistent approach to setting objectives.

The current objectives for carbon monoxide, nitrogen dioxide, fine particulate matter and ground-level ozone are being revised. Through the auspices of the Canada-U.S. Air Quality Agreement, information on these substances has been exchanged at a technical level and common management strategies are being developed.

Draft versions of new objectives for gaseous fluorides and reduced sulphur compounds have also been completed.

Regulating Toxic Substances (CEPA Part II)

Priority Substances

Health Canada has made a major contribution to the Priority Substances Assessment Program of CEPA (Sections 12 and 13). In 1993-94, the Department completed human health risk assessments for 11 of the 44 substances on the first Priority Substances List (PSL1), as follows:

- dichloromethane;
- styrene;
- bis(2-ethylhexyl phthalate);
- mineral fibres;
- 1,2 dichloroethane;
- chromium and its compounds;
- aniline;
- inorganic fluorides;
- cadmium and its compounds;
- polycyclic aromatic hydrocarbons; and
- nickel and its compounds.

In addition, Health Canada drafted sections on the human health-related aspects of waste crankcase oils and 1,1,1-trichloroethane.

Prior to April 1993, Health Canada had completed health assessments for 28 substances on the Priority Substances List (PSL1) and contributions for an additional three. Therefore, Health Canada had fulfilled its responsibilities for assessment before the February 1994 legislated deadline.

Assessment reports for 18 substances were printed in 1993-94 and are included in the publications list. In addition, a paper outlining the basis for determining "toxic" to human health under CEPA was finalized for printing.

In preparation for the second Priority Substances List (PSL2), Health Canada screened the remaining 463 of approximately 590 candidate chemicals for consideration in the revision of the priority list. With Environment Canada, the Department also completed a consultation document on PSL2 that has been circulated to approximately 600 stakeholders and will be revised according to their responses.

Collecting Information

In carrying out the provisions of CEPA Section 17, Environment Canada forwards all information it has collected concerning potential adverse health effects to Health Canada for assessment. Health Canada has received a total of 417 such submissions to date, most of them dealing with hazard data obtained from toxicological studies.

In 1993-94, the Environmental Health Directorate established an electronic database for tracking the review of these submissions. The Directorate also implemented a system for classifying submissions. This enables the allocation of resources to the submission reviews with the highest priority and approximates a time frame for the reviews to be completed.

In consultation with Environment Canada, Health Canada finalized guidelines for submitting information. These guidelines have now been distributed.

New Substances

Under sections 25 to 32 of CEPA (substances new to Canada), Health Canada and Environment Canada are jointly responsible for the assessment and control of new substances that are either imported into or manufactured in Canada. The work of the two departments is concentrated in two main areas: regulations for reporting chemicals and polymers, and regulations for biotechnology products.

Chemicals and Polymers

Health Canada has made major contributions to the following activities with Environment Canada:

- providing advice on changes to the New Substances Notification Regulations following their publication in the *Canada Gazette Part I* in May 1993;
- preparing supporting materials for the publication of the New Substances Notification Regulations in the *Canada Gazette Part II* in April 1994;
- completing a guidance manual to assist Health Canada staff in their assessment of new chemicals and polymers;
- developing processes for responding to notifications so that a reply is sent to the notifier within the assessment period; and
- preparing communications materials for information sessions on the New Substances Notification Regulations that were presented to industry.

Biotechnology Products (Organisms)

The Environmental Health Directorate has continued to work with Environment Canada to develop notification regulations for new biotechnology products. Health Canada staff participated in the organization of the second meeting of a multi-stakeholder consultative committee on these regulations held in July 1993.

At this meeting, the committee reviewed and accepted in principle the data requirements proposed for human health assessment of micro-organisms used in environmental and industrial applications. In addition, the committee accepted information requirements for biochemicals and biopolymers, and incorporated specific notification requirements for nucleic acids in the proposed regulations.

Industry and environmental groups also indicated a need to review the notification guidelines that will explain the information requirements for biotechnology products in detail. In response, Health Canada completed the first draft of notification guidelines for health-related information on micro-organisms and made substantial progress on establishing the criteria for judging and evaluating data. In particular, work proceeded on establishing criteria for identification of micro-organisms, description and evaluation of genetic constructs, description of containment practices, and evaluation of micro-organism exposure.

Managing Toxic Substances

Control of Toxic Substances

Under Section 34 of CEPA, both the Minister of Health and the Minister of the Environment have the authority to establish wide-ranging controls for toxic substances. The particular responsibility of the Minister of Health, however, is to protect the health of the Canadian public.

During 1993-94, the Environmental Health Directorate of Health Canada collaborated with Environment Canada to develop a risk management framework for toxic substances. Health Canada's objective was to ensure that risk-management options for substances with identified health concerns receive appropriate attention within the Environment Canada strategic options process. This input included a priority ranking based on health considerations for 17 substances found to be "toxic" under CEPA during the PSL1 risk assessment program. As a result of this ranking, Health Canada has given arsenic, cadmium, benzene and trichloroethylene a high priority for risk management. Because a number of CEPA toxic substances occur in the emissions associated with certain industrial sectors, risk management for these substances will be developed primarily on a sectoral basis. Discussions with members of the petroleum-refining industry, for example, will contribute to controls over benzene.

In addition, Health Canada completed a report recommending health-based general guidance principles to be applied to the development and implementation of controls under CEPA.

Fuels

In accordance with sections 46 and 47 of CEPA (prohibition and regulation of fuels), as well as with the monitoring provisions of the Act, Health Canada continued to assess the health implications associated with using methylcyclopentadienyl manganese tricarbonyl (MMT) as an octane enhancer in Canadian gasoline. A health-risk assessment is nearing completion.

Other Activities

Research Activities

Under Section 15 of CEPA (information gathering), a number of research activities have continued in the laboratories of the Environmental Health Directorate. The research has included a wide range of projects, including the development of assay methods for determining the harmful effects of potentially toxic substances. In addition, studies have been completed that improve understanding of how toxic substances act on the human body. A list of publications is appended.

Communications

To communicate the outcome of the PSL1 assessments, Health Canada published Assessment Reports, Departmental Issues Papers and papers in peer-reviewed scientific journals, and prepared draft Environmental Health Criteria documents for the International Programme on Chemical Safety. In addition, Health Canada produced a document outlining how substances are determined "toxic" under CEPA. Versions of this document for both the scientific community and the general public were made available. A full list of Health Canada publications related to CEPA can be found in Appendix A.

CEPA Across Canada

Environment Canada offices across the country are instrumental in the administration of CEPA and have been involved in activities featured throughout this report.

Although Canada's five regions share many of the same pollution problems, differences in their geography, natural resources and economies create separate environmental concerns. Regional offices bring these perspectives to the national environmental agenda, which is particularly important in the area of compliance, the regions' first area of responsibility. Within the framework of the annual National Inspection Plan, regional offices can target specific threats directly concerning people in their areas.

Regional offices also perform scientific research and keep a close watch on problems in their areas, becoming involved, for example, in assessing materials on the Priority Substances List.

To round out their support of federal activities, the regions deal directly with the public and often represent the Department in negotiations with the provinces on environmental issues.

Atlantic Region

In 1993-94, Environment Canada's Atlantic Region provided regulatory guidance to Public Works and Government Services Canada, who continued as the lead agency in locating a mobile PCB-destruction facility in the Region. Environment Canada suggested and participated in both the public consultation process and the successful completion of a federal-provincial environmental evaluation associated with this facility. The active campaign to promote removal of in-use PCBs continued.

To control air pollution, the Region continued to collaborate with the Atlantic Provinces. Working together, the governments audited progress under the federal-provincial sulphur dioxide (SO_2) reduction agreements. In addition, negotiations continued with Newfoundland and Prince Edward Island on amendments to the SO_2 reduction agreements and extensions to their applications.

Under the NOx/VOC Management Plan, Atlantic Region investigated options for a Vehicle Inspection and Maintenance Program in cooperation with the Province of New Brunswick. The Region also assisted with ozone monitoring for an international experiment to study the transboundary movement of ground-level ozone in the eastern United States and Canada. As well, in cooperation with the Province of Nova Scotia, the Region completed a study on reducing greenhouse gas emissions to meet stabilization goals.

In its research and monitoring efforts, Atlantic Region

- surveyed wildlife bioindicators at contaminated Atlantic Coastal Action Plan sites and determined exposure of wildlife species to toxic chemicals at those sites;
- assessed the effects of contaminants on declining sharp-shinned hawk populations;
- completed the first year of a two-year study to determine the atmospheric deposition trends of mercury and other metals;
- monitored for cadmium, lead and zinc in the Saint John and St. Croix rivers as part of an ongoing international program;
- monitored for metals, polycyclic aromatic hydrocarbons (PAHs) and polychlorinated biphenyls (PCBs) in Quidi Vidi Lake and Harbour, Newfoundland, under the Canada-Newfoundland Water Quality Monitoring Agreement;
- continued to monitor PAHs and chlorinated benzenes as part of the Regional Organic Contaminants in Precipitation Project and expanded the network to include Gros Morne National Park in Newfoundland; and

- conducted an integrated ocean disposal-site monitoring program in Saint John Harbour in cooperation with the Department of Fisheries and Oceans and Environment Canada in the Quebec and Prairie and Northern regions.

The Region also completed various projects related to toxic substances management, including use-pattern assessments of ozone-depleting substances and other chemicals, assessment of the dioxin and furan contamination of tall-oil resins and of commercial soaps.

As part of its enforcement efforts, Atlantic Region conducted 168 inspections to monitor compliance with Storage of PCB Materials Regulations, Chlorobiphenyl Regulations, Ozone-Depleting Substances Regulations, Chlor-Alkali Mercury Release Regulations, Gasoline Regulations, Contaminated Fuels Regulations, Ocean Dumping Regulations, Pulp and Paper Mill Effluent Chlorinated Dioxin and Furan Regulations, and Export and Import of Hazardous Waste Regulations. The results of these inspections included 17 investigations, 28 warnings and one prosecution.

The Region also participated in the review of a major halon release from a Nova Scotia Canadian Forces Base. Following this investigation, the Department of National Defence reviewed its halon use across Canada, and will reduce its consumption nationally. Atlantic Region also developed a national inspector's protocol for the Export and Import of Hazardous Waste Regulations.

In support of the ocean dumping provisions of CEPA, Atlantic Region issued a total of 153 ocean-disposal permits, and conducted 35 inspections and three investigations. As well, the region's staff conducted numerous public meetings and media interviews to explain the regional ocean dumping program and to exchange ideas on the regulatory revision of the ocean dumping provisions of CEPA.

As part of the CEPA review program, Atlantic Region also led a study of coastal zone management and its relationship with CEPA.

Quebec Region

In 1993-94, the technical and legal training of enforcement officers remained a priority in Quebec Region. Officers completed a total of 643 inspections under CEPA. These resulted in 83 warnings, 15 investigations and one direction. Six cases came before the courts, and penalties such as fines, community service and grants to environmental projects were imposed.

Quebec Region granted 31 ocean-disposal permits, the majority of which were for dredging materials from harbours in the Gaspé and Iles-de-la-Madeleine areas. The Region also conducted environmental monitoring activities on an immersion site in Baie-des-Chaleurs.

To encourage preventive measures, the Region concentrated on promoting the implementation of the National Pollutant Release Inventory and made training available for facilities that had to report information for inclusion in NPRI. The Region also paid special attention to Ozone-Depleting Substances Regulations, Export and Import of Hazardous Waste Regulations and Storage of PCB Materials Regulations.

The 1993-94 fiscal year, also saw the implementation of the Pulp and Paper Mill Effluent Chlorinated Dioxin and Furan Regulations. Quebec Region is negotiating an administrative agreement with the Quebec Ministry of the Environment to enforce these regulations jointly. The negotiation of this agreement is near successful completion.

In addition, Quebec Region completed a national evaluation of polycyclic aromatic hydrocarbons (PAHs), a substance on the CEPA Priority Substances List. Three documents that support the assessment were published, including an inventory of Canadian sources of PAHs, a report on PAHs in the environment, and a report on the ecotoxicity of PAHs.

Finally, as part of a commitment to "Starting in Our Own House," the Region developed a five-year plan to promote compliance with environmental initiatives within federal installations. To this end, more than 200 federal government representatives participated in a regional pollution prevention workshop organized by Environment Canada.

Ontario Region

During 1993-94, Ontario Region maintained an active compliance inspection program. Inspection priorities for the year included implementation of the Ozone-Depleting Substances Regulations, the Storage of PCB Materials Regulations, Chlorobiphenyls Regulations, Vinyl Chloride Release Regulations, Export and Import of Hazardous Waste Regulations, the Pulp and Paper Mill Effluent Chlorinated Dioxin and Furan Regulations, Chlor-Alkali Mercury Release Regulations, and Secondary Lead Smelter Release Regulations. The Region conducted a total of 415 inspections under CEPA, resulting in 31 violations for which warnings and directions were issued. In other enforcement action, it also initiated 85 occurrence reports, resulting in 17 investigations into suspected violations of CEPA, and issued six warning letters.

As part of a program to encourage compliance, Ontario Region hosted several workshops for federal departments on PCBs, ozone-depleting substances, underground storage tanks and contaminated sites. Regional staff made presentations to several federal departments on compliance, developed and distributed promotional bulletins, and worked closely with federal departments and agencies on site-specific compliance problems. The Region is now using an electronic bulletin board called ENVIRONET to disseminate compliance messages to federal departments.

In addition, Ontario Region continued discussions with the province for a pulp and paper administrative agreement pertaining to CEPA and the *Fisheries Act*.

Prairie and Northern Region

In 1993-94, Prairie and Northern Region completed the toxicity assessment of creosote-impregnated waste materials, a substance included on the original Priority Substances List. Because the assessment demonstrated the harmful effects of creosote-contaminated sites on freshwater animal and plant life, the Minister of the Environment and the Minister of Health concluded that creosote-contaminated sites are "toxic" as defined under CEPA.

Working with the Department of National Defence and Indian and Northern Affairs Canada, the Region also continued to assist in assessment and remediation of 42 active and abandoned DEW Line sites, giving technical advice on remediation plans to ensure that health concerns were addressed.

Staff also conducted inspections to ensure compliance with regulations under CEPA. Prairie and Northern Region Enforcement and Compliance Officers conducted 191 inspections and 25 investigations and issued five warnings. One prosecution was initiated under the Gasoline Regulations.

Canada and Saskatchewan developed an agreement pursuant to Section 98 of CEPA to enhance cooperation in the implementation of toxic substances legislation. The agreement will reduce regulatory duplication and ensure effective management of toxic substances. It will be signed in 1994.

The Region also developed an equivalency agreement with Alberta, which is expected to be signed in June 1994. The agreement recognizes provincial requirements of CEPA that are equivalent to the following CEPA regulations: Secondary Lead Smelter Release Regulations, Vinyl Chloride Release Regulations, Pulp and Paper Mill Effluent Chlorinated Dioxin and Furan Regulations, and certain provisions of the Pulp and Paper Mill Defoamer and Wood Chip Regulations. As a result, these CEPA regulations will cease to apply in Alberta.

Pacific and Yukon Region

As in other parts of the country, monitoring is an important gauge of environmental quality in the Pacific and Yukon Region. Accordingly, sampling for dioxins, furans and chlorinated phenolic compounds in suspended sediment continued at sites upstream and downstream from pulp mills in the Fraser Basin. As well, as part of the Fraser River Estuary Management Program (FREMP) Water Quality Plan, chlorophenols, chloroguaicols and chlorocatechols will be sampled in fish collected from four sites in the lower Fraser River in British Columbia. In the Strait of Georgia and the Fraser Basin, monitoring of contaminants in fish-eating birds continues, with emphasis on biomagnification of dioxins and furans in marine and aquatic food webs. Research on contaminants and productivity in bald eagles has also been initiated.

A toxic chemical committee, established by the federal and provincial governments, worked toward addressing the life-cycle management of toxic chemicals, defined priorities and promoted cooperative programs between the two levels of government.

Historical releases of spent abrasive blasting grits, solvents and coatings from shipyards have contaminated marine sediments with metals and organic substances. In 1993, a draft best management practices (BMP) document for commercial ship building and repair facilities in British Columbia was prepared to provide operational guidance and specify control measures to prevent releases of these substances. The BMP document is scheduled for completion in 1994.

Lead poisoning of bald eagles continues to be a problem in the lower Fraser Valley, eastern Vancouver and some locations of the B.C. interior. Eagles are exposed to lead when they capture and eat waterfowl either wounded by lead shot or with lead shot in their gizzards. As a result, the federal and B.C. governments' plan to expand the limited-area ban on the use of lead shot for waterfowl hunting to the whole province in 1995.

An investigation of fish contamination in Lake Laberge, requested under Section 108 of CEPA by three Yukon residents in 1991, is ongoing. In February 1994, department officials participated in a major workshop on northern contaminants to evaluate the scientific evidence currently available for information related to a potential CEPA violation. Although the Department concluded there was no evidence of a CEPA violation at that time, the investigation remains open.

The Region continues to be actively involved in projects to manage and reduce the use of ozone-depleting substances (ODS). A workshop on ODS management at federal facilities was held in 1994. A project is under way to find an alternative solvent to CFC-113 in the oil-and-grease method. Before implementing the new method at the regional laboratory in 1994, round-robin testing of the new method will be conducted with government laboratories in other regions. To assist in finding solutions for disposal of unwanted ODSs, a two-year research project was initiated at Simon Fraser University in 1994.

The leaching of anti-sapstain chemicals is another ongoing study. Updated environmental management practices scheduled for completion in 1994 will provide guidance on the design and operation of chemical application facilities, and on the prevention and control of chemical releases to the environment.

A team of Environment Canada representatives and other government and industry stakeholders is examining the reduction of perchloroethylene consumption and release from dry cleaning facilities in the Greater Vancouver area. A technical and economic profile of the business sector will identify the dry cleaning facilities, types and performances of installed systems, and losses of perchloroethylene to the environment via air, water and solid wastes. The project management team will develop response strategies and assess their economic and environmental benefits in 1994-95.

Work continued on a multi-agency/industry study that is examining toxic pollutant emissions generated when pulp mill waste sludges are burned with bark in a wood waste-fired power boiler at Fletcher Challenge's Elk Falls pulp mill. In addition to the emission testing study, health risk assessments will be conducted on the impact of various toxic pollutant emissions on local residents. The study findings will provide a basis for determining the need for future emission controls.

In addition, ocean disposal site monitoring resumed after a few years of minimal activity. Several public consultation sessions with industry and environmental non-government organizations were undertaken.

Inspection programs focused on the Storage of PCB Materials Regulations, Pulp and Paper Mill Effluent Chlorinated Dioxin and Furan Regulations, and Chlorobiphenyls Regulations. In particular, cooperative inspection programs under the Ozone-Depleting Substances Regulations and Export and Import of Hazardous Waste Regulations were initiated in conjunction with Revenue Canada Customs, Excise and Taxation; and the B.C. Ministry of Environment, Lands and Parks to assist monitoring the international movement of controlled substances and hazardous wastes. In the Yukon, transboundary shipments of hazardous wastes from Alaska to other U.S. states were inspected under the Export and Import of Hazardous Waste Regulations. In British Columbia, investigations into violations were launched under the Ocean Dumping Regulations, Ozone-Depleting Substances Regulations No. 2, and the Export and Import of Hazardous Waste Regulations. Two successful prosecutions were completed.

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Appendix B: CEPA Expenditures

To keep pace with Canada's dedication to environmental protection on both the national and international fronts, CEPA's monetary commitment has more than tripled over the past years. The dollar value of CEPA-related initiatives has increased from approximately $21 million in fiscal year 1988-89 to $65 million in 1993-94.

This increase in funding has supported an increase in CEPA's scope beyond the research, monitoring and enforcement responsibilities it has always encompassed. Since 1991-92, efforts under CEPA have expanded to include regular reporting on the state of Canada's environment, as well as more-stringent monitoring of pollutants (under the National Pollutant Release Inventory), ozone-depleting substances and hazardous wastes.

As well, efforts under CEPA have accelerated in several areas of particular concern. Funding for assessments of substances on the Priority Substances List and Strategic Options Reports for those substances deemed toxic as defined by CEPA has increased steadily since CEPA has been in place. Funding for Regulatory Impact Analysis Statements for proposed regulations has also increased steadily as the federal government concentrates more and more on evaluating and quantifying the benefits of environmental protection.

Fiscal year 1992-93 was the first year a report has been made on expenditures under CEPA. The following table provides a breakdown of CEPA expenditures for the past six years.

CEPA Annual Financial Report ($000)

	1988-89	1989-90	1990-91	1991-92	1992-93	1993-94	Total Cost to date
PART I							
Research and Monitoring	X	X	X	10,200	9,513	9,196	28,909
SOE Reporting	NP	NP	NP	6,943	7,052	8,192	22,187
Guidelines and Codes	3,310	3,485	4,112	4,187	4,087	4,036	12,310
Environmental Choice				5,453	3,370	2,352	11,155
Part I Subtotal	**3,310**	**3,485**	**4,112**	**26,763**	**24,022**	**23,776**	**82,158**
PART II							
Existing Substances	542	1,050	1,644	1,917	1,540	1,272	7 965
Priority Substances	2,016	2,016	2,016	6,545	8,755	3,860	25,208
N.P.R.I.	NP	NP	NP	713	989	1,964	3,666
New Substances	1,521	1,691	1,797	1,908	1,898	1,880	10,695
Control Opt./Regs/RIAS	7,500	7,500	7,500	8,501	12,761	11,252	55,014
Biotechnology	275	630	1,264	1,415	2,455	1,652	7,691
Ozone Depleting Substances	NP	NP	NP	2,393	2,596	2,892	7,881
Import/Export Hazardous Waste	NP	NP	NP	1,742	1,742	1,756	5,240
PCO(J) Unit	NP	NP	NP	357	357	356	1,070
CEPA Lawyers	1000	828	818	906	906	908	5,366
Good Lab. Practice	NP	NP	NP	40	120	180	340
Part II Subtotal	**12,854**	**13,715**	**15,039**	**26,437**	**34,119**	**27,972**	**130,136**
PART III N/A							
PART IV							
Federal Activities	NP	100	100	433	433	432	1,498
Part IV Subtotal	**NP**	**100**	**100**	**433**	**433**	**432**	**1,498**
PART V N/A							
PART VI							
Ocean Dumping	758	758	758	1,036	1,526	2,128	6,964
Part VI Subtotal	**758**	**758**	**758**	**1,036**	**1,526**	**2,128**	**6,964**
PART VII							
Enforcement	3,762	4,314	5,070	6,796	9,200	9,822	38,964
CEPA Annual Report & Management	400	400	400	400	400	400	2,400
Part VII Subtotal	**4,162**	**4,714**	**5,470**	**7,196**	**9,600**	**10,222**	**41,364**
GRAND TOTALS	**17,774**	**22,772**	**25,479**	**61,865**	**69,700**	**64,530**	**262,120**

X= Not accounted against CEPA prior to 1991
NP= New Program funds not previously available
DSL= Domestic Substances List cost $5M included in New Substances
N/A= Not Applicable